Entered in NID File ..... Checked by Chie. .....
Location Map Pinned ..... Approval Letter .....
Card Indexed ..... Disapproval Letter .....

COMPLETION DATA:

Well Completed 3-17-76 Location Inspected .....

WW: WW: TA:
GW: ✓ OS: PA: Bond released
State or Fee Land .....

LOGS FILED

Driller's Log.....
Logs (No.) ✓.....

Dual I Lat..... GR-N..... Micro.....
Mi-L..... Sonic.....

FILE NOTATIONS

Entered in NID File ..... Checked by Chief

Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] OTHER — SINGLE ZONE [X] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: Gas Producing Enterprises, Inc.

3. ADDRESS OF OPERATOR: P. O. Box 1138, Vernal, UT 84078

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 2401' FWL, 2337' FSL, Section 10, 10S,22E
At proposed prod. zone: Same

5. LEASE DESIGNATION AND SERIAL NO.: U-025187

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: ---

7. UNIT AGREEMENT NAME: Natural Buttes

8. FARM OR LEASE NAME: ---

9. WELL NO.: 18

10. FIELD AND POOL, OR WILDCAT: Natural Buttes

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 10,T10S, R22E, S

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: Approximately 18 miles ESE of Ouray, Utah

12. COUNTY OR PARISH: Uintah

13. STATE: UT

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 2401'

16. NO. OF ACRES IN LEASE: 640

17. NO. OF ACRES ASSIGNED TO THIS WELL: 640

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.:

19. PROPOSED DEPTH: 9200'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 5094' Ungraded GR

22. APPROX. DATE WORK WILL START: 8-25-75

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/4"	13-3/8"	42#	75'	200 sx
10-3/4"	8-5/8"	24.7#	2000'	250 sx
7-7/8"	4-1/2"	11.6#	9000'	550 sx

See attached 7-Point Well Control Plan and 12-Point Surface Use Plan

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new produ
zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blo
preventer program, if any.

24.

SIGNED K.E. Oden TITLE Area Superintendent DATE 7-21-75

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE DISTRICT ENGINEER DATE AUG 05 1975

CONDITIONS OF APPROVAL, IF ANY:

State O&G approval notice

*See Instructions On Reverse Side

ATTCHMENT 2-A

Gas Producing Co.
Natural Buttes 18
NESW 10-10s-22E
U-025187 7-31-75

BLM - Huff
USGS - Alexander
GPE. - Hertel

☒ Enhance
☐ No Effect
☑ Minor Impact
☒ Major Impact

SUMMARY ENVIRONMENTAL IMPACT EVALUATION

		Construction				Pollution				Drilling Production						Transport Operations			Accidents		Other
		Roads, bridges, airports	Transmission lines, pipelines	Dams & impoundments	Others (pump stations, compressor stations, etc.)	Burning, noise, junk disposal	Liquid effluent discharge	Subsurface disposal	Others (toxic gases, noxious gas, etc.)	Well drilling	Fluid removal (Prod. wells, facilities)	Secondary Recovery	Noise or obstruction of scenic views	Mineral processing (ext. facilities)	Others	Trucks	Pipelines	Others	Spills and leaks	Operational failure	
Land Use	Forestry NA																				
	Grazing ✓	/		/		/	/			/			/			/			/	/	
	Wilderness NA																				
	Agriculture NA																				
	Residential-Commercial NA																				
	Mineral Extraction NA																				
	Recreation ✓	O				/	/			/			/			/			/	/	
	Scenic Views ✓	/		/		/	/			/			/			/			/	/	
	Parks, Reserves, Monuments NA																				
	Historical Sites NA																				
	Unique Physical Features NA																				
Flora & Fauna	Birds ✓						/			/			/						/	/	
	Land Animals ✓	/		/			/			/			/						/	/	
	Fish NA																				
	Endangered Species None Known																				
	Trees, Grass, Etc. ✓	/		/		/	/												/		
Phy. Charact.	Surface Water NA																				
	Underground Water ?																				
	Air Quality ✓					/				/						/				/	
	Erosion ✓	/		/			/												/	/	
	Other																				
	Effect On Local Economy ✓	O		O						O						O					
	Safety & Health ✓					/				/			/			/			/	/	
	Others cc: Denver, Casper, State O&G, File ✓																				

Gas Producing Enterprises, Inc.
Natural Buttes #18 - Section 10, 10S, 22E, SLB&M
Lease U-025187

7-Point Well Control Plan

1. Surface Casing: 13-3/8" 42# 75' R2, new.

2. Casinghead: 12" 900 Series, 3000# WP, 6000# test.

3. Intermediate Casing: 8-5/8" 24.7# 2000' R2, new.

4. Blowout preventers: 1QRC preventer, 1 - 4½" pipe ram, 1 blind ram, 1 inflatable Hydril, 1 Grant rotating head. All flanges 12" 900 Series, 3000# WP, 6000# test, with standard accumulator and N2 bottles. Manifold includes appropriate valves, chokes, fill line, kill line, and gas-mud separator to control abnormal pressure. Controls on floor and at remote location.

5. Auxiliary equipment: Kelly cocks, string float, TIW safety valves (to be used to control kicks on floor).

6. Anticipated bottom hole pressure at TD - 2500#.

7. Drilling fluid: Well is to be drilled with 9.5# salt water to depth of 5000'. From 5000' to TD, well will be drilled with brine water and starch. Estimated weight 9.8 to 10#.

7-21-75
KEO/kh

GAS PRODUCING ENTERPRISES

12 POINT SURFACE USE PLAN

FOR

NATURAL BUTTES #18

SECTION 10, T10S, R22E, S.L.B. & M.

1. Existing Road

To Reach Gas Producing Well Location Natural Buttes #18 located in Section 10, T10S, R22E, S.L.B. & M. Proceed southerley from Ouray, Utah on P.R. Springs Road 11.5 miles; exit to the East on main road and proceed Easterly 5 miles keeping to the right; exit to the right on dirt road and proceed Easterly 3.5 miles keeping to the left; exit to the left and proceed Northerly 2.8 miles keeping to the left; exit to the right and proceed northerly 1 mile; exit to the right onto graded road and proceed Easterly 0.6 mile to said location.

2. Planned Access Road

As shown on the attached topographic map, the planned access road will leave the location on the Northewest corner of the location and proceed West for approximately 0.6 miles to the intersection of dirt road. No other access roads are planned. The access road will be a 20' wide road (2 10' travel lanes) with a bar ditch on each side to permit dranage. Culverts will be placed as needed to permit normal flow of water in existing drainages.

3. Location of Existing Wells

There are no known wells within a radius of 1/2 mile. There is a drill hole 1/2 mile Northwest of the proposed location. All wells in the surrounding are shown on the attached topographic map.

4. Lateral Roads to Well Locations.

Road to existing wells are shown on the attached topographic map.

5. Location of Tank Batteries and Flowlines

See attached topographic map for location of proposed flowlines.

6. Location and Type of Water Supply

Water used to drill this well will be hauled from the White River 3.4 miles North of the location.

7. Methods for Handling Waste Disposal

All waste will be buried in a pit, and covered with a minimum 2' of cover. A portable chemical toilet will be provided for human waste.

8. Location of Camps

There will be no camps.

9. Location of Airstrips

There will be no airstrips.

10. LOCATION LAYOUT

SEE ATTACHED LOCATION LAYOUT SHEET.

11. PLANS FOR RESTORATION OF SURFACE

THERE IS NO MEASUREABLE TOPSOIL IN THE AREA. ON COMPLETION PITS WILL BE FILLED, AND THE SURROUNDING AREA RELEVELED, AND RE-SEEDED WITH CRESTED WHEAT GRASS AT THE RATE OF 6 POUNDS PER ACRE.

12. TOPOGRAPHY

THE AREA SURROUNDING THE LOCATION CONSISTS OF GENERALLY SMALL ROLLING HILLS AND SOME GULLIES AND WASHES. BITTER CREEK PASSES THE LOCATION 0.35 MILES FROM THE LOCATION, THE TERRAIN STEPPENS BETWEEN BITTER CREEK AND THE LOCATION. THE AREA IS VEGITATED WITH SMALL GRASSES AND SAGE BRUSH. (SEE ATTACHED TOPOGRAPHIC MAP).

y 1963)

(Other instructions on reverse side)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: U-025187

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: ---

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] OTHER — SINGLE ZONE [X] MULTIPLE ZONE [ ]

7. UNIT AGREEMENT NAME: Natural Buttes

8. FARM OR LEASE NAME: ---

2. NAME OF OPERATOR: Gas Producing Enterprises, Inc.

9. WELL NO.: 18

3. ADDRESS OF OPERATOR: P. O. Box 1138, Vernal, UT 84078

10. FIELD AND POOL, OR WILDCAT: Natural Buttes

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 2401' FWL, 2337' FSL, Section 10, 10S,22E SW NE NENESW
At proposed prod. zone: Same

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 10,T10S, R22E, SLBM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: Approximately 18 miles ESE of Ouray, Utah

12. COUNTY OR PARISH: Uintah

13. STATE: UT

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10-3/4"	8-5/8"	24.7#	2000'	250 sx
7-7/8"	4-1/2"	11.6#	9000'	550 sx

See attached 7-Point Well Control Plan and 12-Point Surface Use Plan

APPROVED BY DIVISION OF
OIL & GAS CONSERVATION

DATE 7-30-75

BY C. B. Feight

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. K.E. Oden

SIGNED K.E. Oden TITLE Area Superintendent DATE 7-21-75

(This space for Federal or State office use)

PERMIT NO. 43-047-30221 APPROVAL DATE

APPROVED BY TITLE DATE

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

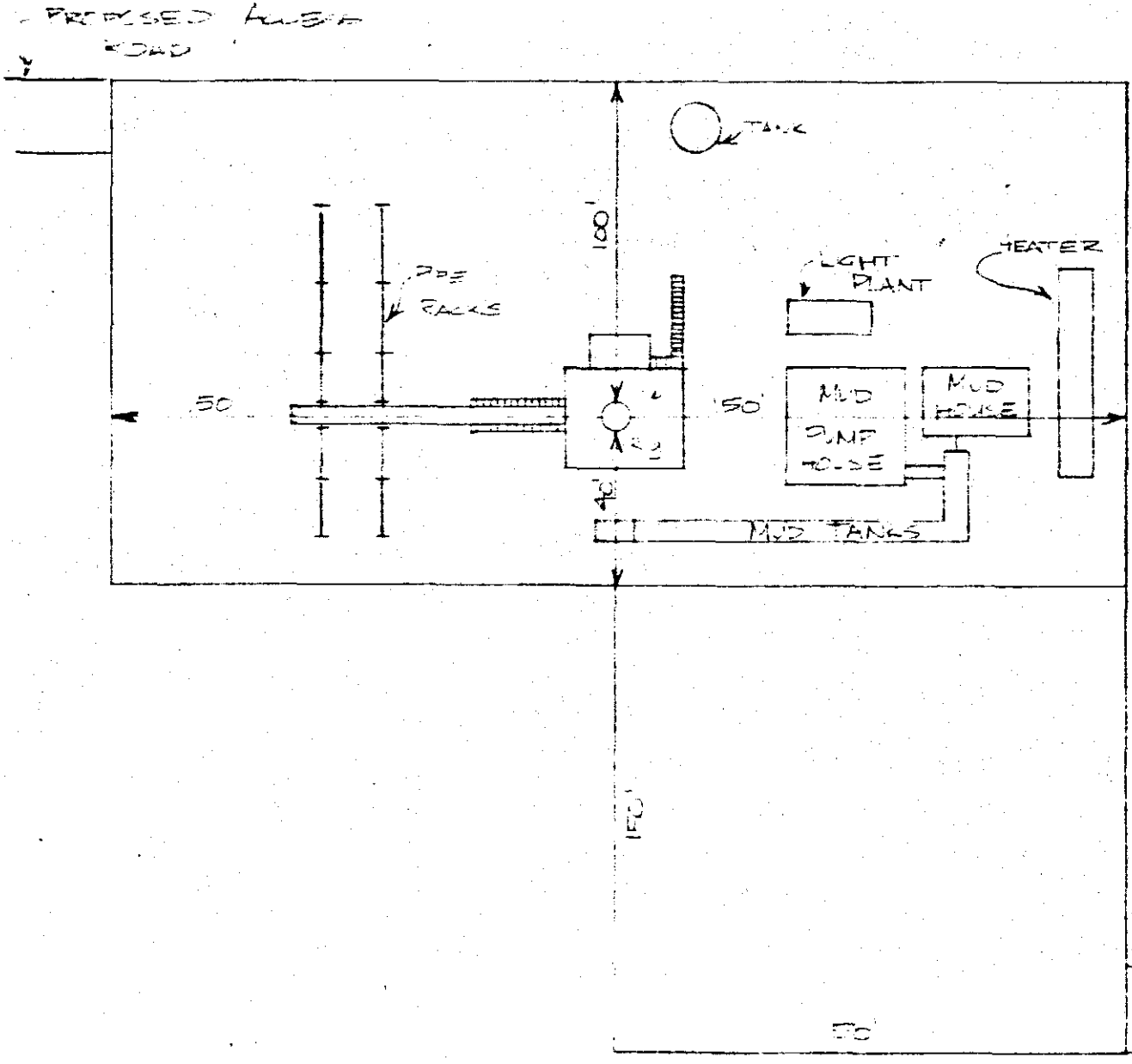
28 Gas Well
RIVER
27
26
Gas Well
33
34
35
WHITE
Gas Well
Pumping Station
4
3
2
RIVER
PIPELINE
GAS FIELD
Pumping Station
9
Existing ROAD
10
Proposed Access Road
Proposed Location
11
Pumping Station
16
15
14

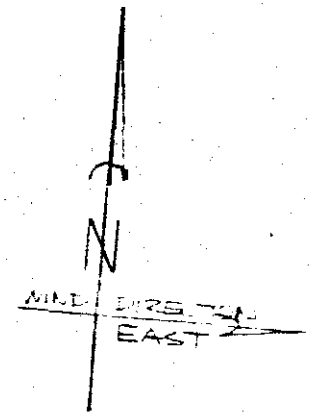
GAS PRODUCING ENTERPRISE

LOCATION LAYOUT

IN

SECTION 10, T10S, R22E, SL





SCALE: 1" = 50'

DATE: 1/21/75

DIVISION OF OIL, GAS, AND MINING

FILE NOTATIONS

Date: July 28, 1975

Operator: J Gas Producing

Well No: Natural Butte Unit 18

Location: Sec. 10 T. 10S R. 22E County: Uintah

File Prepared [✓] Entered on N.I.D. [✓]

Card Indexed [✓] Completion Sheet [ ]

Checked By:

Administrative Assistant: [✓]

Remarks:

Petroleum Engineer/Mined Land Coordinator: [✓]

Remarks:

Director: [✓]

Remarks:

Include Within Approval Letter:

Bond Required [ ] Survey Plat Required [ ]

Order No. [ ] Blowout Prevention Equipment [ ]

Rule C-3(c) Topographical exception/company owns or controls acreage within a 660' radius of proposed site [ ]

O.K. Rule C-3 [ ] O.K. In Nat Butte Unit [✓]

Other: [ ]

[✓] Letter Written

July Then Nov. 1/5

GAS PRODUCING ENTERPRISES, INC.
A Subsidiary of Coastal States Gas Producing Company
Phone (801) 789-4433
Vernal, Utah 84078

Mailing Address
P.O. Box 1138

January 9, 1976

State of Utah
Department of Natural Resources
Division of Oil, Gas & Mining
1588 West North Temple
Salt Lake City, Utah 84116

Attention: Kathy Ostler

Re: Well No. Natural Buttel #18
Sec 10, T. 10S, R. 22E
Uintah County, Utah

Subject well was spudded on December 27, 1975. Surface pipe was set at 84' KB. The well is presently drilling at 1121 feet, intermediate 8 5/8" casing is to be set at 2450 feet. The well will then be drilled to the depth of approximately 9,000 feet +--. At this time, the electric logs will be run and Form OGC-3, in duplicate, will be completed and forwarded to your office as soon as possible. We anticipate the completion date of this well to be approximately January 28, 1976.

Very truly yours,

K. E Oden

Karl E. Oden
Area Superintendent

b

SARABAND

A Sandstone Analysis

- Continuous computation of log data.
- Analog and tabular listing of results.
- Analysis of sands—both clean and shaly.

SARABAND is computed using the following logs:

Resistivity — from the Induction Log, Dual Induction or Laterolog.

Density — from FDC—Formation Density Compensated Log.

Neutron — from SNP—Sidewall Neutron Log, or CNP—Compensated Neutron Log.

Sonic — from BHC—Borehole Compensated Sonic Log.

And SP and Gamma Ray are run in conjunction with the above logs.

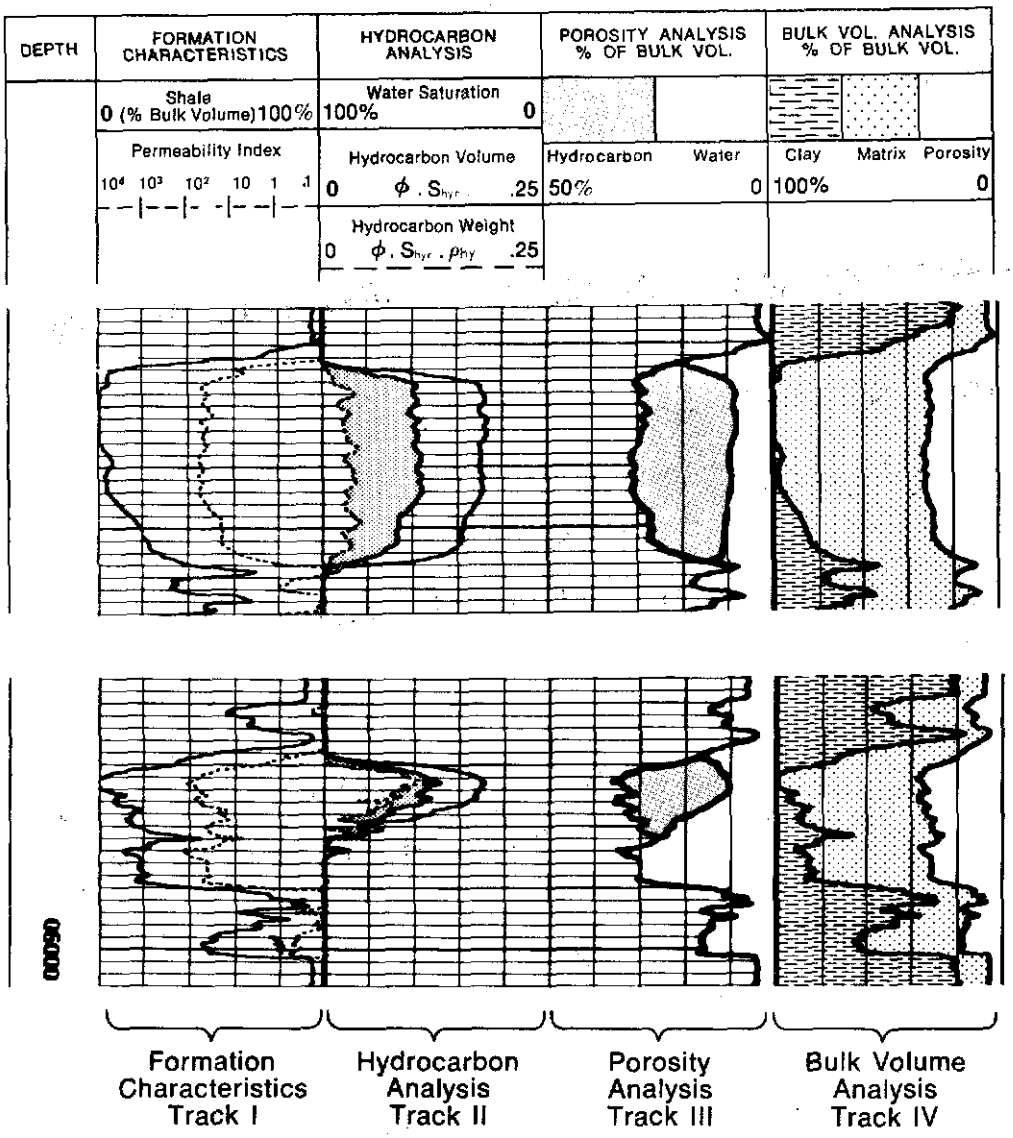
SARABAND
A Sandstone Analysis

Tabular Listing Data

Column 1	Depth in feet.
Column 2	Permeability index in millidarcies.
Column 3	Formation porosity in percent from Neutron-Density data after correction for hydrocarbon and shale effects.
Column 4	Water saturation in percent.
Column 5	Density in gm/cc of hydrocarbon. Hydrocarbon densities in the range between .7 gm/cc and 1.0 gm/cc are all listed as .7* in the tabular listing.
Column 6	V_{clay}, the fraction of bulk volume occupied by wet clay.
Column 7	Total cumulative porosity—feet from the top of the computed section.
Column 8	Total cumulative hydrocarbon—feet from the top of the computed section.

The cumulative numbers in columns 7 and 8 can be used respectively to calculate reservoir pore space and volume of hydrocarbons in place. The total pore space, in barrels per acre, is equal to the difference in the numbers of column 7 at the top and bottom of the zone of interest multiplied by 7758. A similar calculation yields the total barrels per acre of hydrocarbons in place.

SARABAND A Sandstone Analysis



Formation Characteristics - Track I

Shale Volume (V_{sh})—Bulk volume fraction of shale, both wet clay and silt. V_{sh} is computed from neutron-density data from a special logic relating other shale indicators (SP, GR and Resistivity) to the volume of shale. This is an excellent correlation curve which should permit the differentiation between sands, shale and shaly sands.
Permeability Index—The scale for this curve is a 5-cycle logarithmic scale.

Hydrocarbon Analysis - Track II

Water Saturation (S_w)—Fraction of pore volume filled with formation water.
Hydrocarbon Volume ($\phi \cdot S_{hyr}$)—Residual hydrocarbon per bulk volume where S_{hyr} is residual hydrocarbon saturation.
Hydrocarbon Weight ($\phi \cdot S_{hyr} \cdot \rho_{hy}$)—Weight of residual hydrocarbon per bulk volume where ρ_{hy} is the density of the hydrocarbon.
The two curves, $\phi \cdot S_{hyr}$ and $\phi \cdot S_{hyr} \cdot \rho_{hy}$, converge in oil zones since the density of oil is close to unity. In light hydrocarbon zones, the two curves diverge.
The ratio of $\phi \cdot S_{hyr} \cdot \rho_{hy}$ to $\phi \cdot S_{hyr}$ is the hydrocarbon density.
The values of hydrocarbon density derived from the computation appear on the tabular listing.

Porosity Volume Analysis - Track III

Porosity (ϕ)—Formation porosity corrected for hydrocarbon and shale effect.
Water-filled Porosity ($\phi \cdot S_w$)—Represents the formation water in the pore space (in per cent of bulk volume).
The area between the two curves corresponds to hydrocarbon-filled porosity.

Bulk Volume Analysis - Track IV

Clay Volume (V_{clay})—SARABAND logic assumes shale to consist of wet clay and silt. V_{clay} represents only the bulk volume fraction of wet clay, whereas V_{sh} of Track I represents the total shale bulk volume (clay plus silt).
Matrix (V_{matrix})—Bulk volume fraction of non-clay solids (includes silt).
Porosity (ϕ)—Formation porosity corrected for hydrocarbon and shale effects.

Tabular Listing

1 DEPTH FEET	2 PERM INDEX MD	3 POROSITY PERCENT	4 WATER SATURATION PERCENT	5 HYDRO-CARBON DENSITY GM/CC	6 CLAY PERCENT	7 TOTAL POROSITY FEET	8 TOTAL HYDRO-CARBON FEET

Partial Listing of Gas Zone in Upper Log Example

7425	50	25.8	61	.1	2	64.57	6.59
7426	190	28.6	42	.2	2	64.85	6.74
7427	400	30.4	31	.1	2	65.15	6.93
7428	400	29.0	30	.3	0	65.44	7.14
7429	400	28.3	26	.3	0	65.73	7.34
7430	500	29.5	28	.2	0	66.02	7.55
7431	300	28.7	30	.2	0	66.31	7.76
7432	300	27.1	30	.3	0	66.59	7.95
7433	500	29.6	26	.2	0	66.88	8.16
7434	400	28.1	28	.2	0	67.16	8.36
7435	400	28.8	27	.3	0	67.45	8.57
7436	400	29.0	28	.3	0	67.74	8.78
7437	400	29.2	30	.4	1	68.03	8.99
7438	500	30.3	30	.4	2	68.33	9.19
7439	600	31.3	29	.2	3	68.64	9.41
7440	500	31.0	30	.3	4	68.95	9.63
7441	400	30.1	30	.3	2	69.26	9.84
7442	600	31.3	29	.3	1	69.57	10.06
7443	500	30.3	30	.4	2	69.87	10.27
7444	600	31.1	29	.3	2	70.18	10.49
7445	500	31.1	29	.2	3	70.49	10.71
7446	400	30.3	31	.3	4	70.80	10.92
7447	300	29.7	32	.3	6	71.10	11.13
7448	300	28.7	34	.3	8	71.39	11.32

Partial Listing of Oil-Water Zone in Lower Log Example

5968	0	11.8	100		49	1.36	.00
5969	4	15.8	99		33	1.51	.00
5970	17	19.0	78		26	1.69	.03
5971	90	25.7	49	.4	19	1.93	.14
5972	500	33.0	35	.7*	3	2.24	.33
5973	800	34.4	30	.7*	0	2.58	.56
5974	700	33.6	30	.7*	0	2.93	.81
5975	500	32.0	32	.7*	3	3.26	1.03
5976	800	35.2	32	.7*	5	3.59	1.25
5977	600	35.5	38	.7*	5	3.94	1.47
5978	150	30.1	52	.7	14	4.25	1.63
5979	170	32.1	58	.5	10	4.57	1.77
5980	300	28.1	80		10	4.87	1.86
5981	400	30.3	74	.1	15	5.17	1.93
5982	200	29.2	83		25	5.47	1.98
5983	200	27.0	97		19	5.72	1.99
5984	300	29.0	98		17	6.00	1.99
5985	1200	33.9	96		8	6.35	2.01
5986	400	30.1	99		13	6.67	2.01
5987	400	29.7	100		13	6.96	2.01
5988	400	29.6	100		14	7.26	2.01
5989	500	30.2	99		12	7.56	2.01
5990	190	27.0	99		20	7.84	2.02
5991	0	13.0	100		47	8.01	2.02

TABULAR LISTING

OF

S A R A B A N D

A SANDSTONE ANALYSIS

COMPANY GAS PRODUCING ENTERPRISES INC.

WELL NATURAL BUTTES UNIT NO.18

FIELD NATURAL BUTTES UNIT

COUNTY UINTAH

STATE UTAH

DATE 9-FEB-76

TAPE IDENT. RM-50064,GAS PRODUCING ENTERP.,NATURAL BUTTES UNIT #18,NAT. BUT

TABULAR LISTING

OF

S A R A B A N D

A SANDSTONE ANALYSIS

COMPANY GAS PRODUCING ENTERPRISES INC.

WELL NATURAL BUTTES UNIT NO.18

FIELD NATURAL BUTTES UNIT

COUNTY UINTAH

STATE UTAH

DATE 8-FB-76

TAPE IDENT, RN-50064,GAS PRODUCING ENTERP.,NATURAL BUTTES UNIT #18,NAT. BUT

LS	LD	LN	LXO	LSN	LILM	LILD	LSP	LGR	LCAL
15	14	11	0	70	71	66	6	19	18

SP BASE LINE SHIFT

NONE

CNSP ARRAY	999.	0.	0.	0.	0.	0.	0.	0.
RW ARRAY	0.150	0.150	0.150	0.000	0.000	0.000	0.000	0.000
AT DEPTH	9115.	7000.	5400.	0.	0.	0.	0.	0.
AT TEMP	0.	0.	0.	0.	0.	0.	0.	0.
TOP DEPTH	7000.	5400.	0.	0.	0.	0.	0.	0.

ROG ARRAY	2.68	2.68	2.68	0.00	0.00	0.00	0.00	0.00
DTMA ARRAY	51.2	51.2	51.2	0.0	0.0	0.0	0.0	0.0
ZSNMA ARRAY	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP DEPTH	7000.	5400.	0.	0.	0.	0.	0.	0.

```
ISS =  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
       0 0 0 1 0 1 1 0  2  0  0  0  0  0  0  0  1  0  0  0  0

INPUT PARAMETERS FROM  5400. TO  4000.

 WMUD XLIT BITSZ  BHT BHTDEP SUFT   RMF RMFT ROMFS PHIMFS DASIL
  9.8 0.50  7.88 160.  9120.  60.  0.05  65. 1.174  0.898 0.600

  SPCK  DSPCK RODC DELRGM START STOPLG ZSPNL  BGN ZSPDL   REC  RESH CSS
    0.     0. 2.84  0.20  9115.  4000. 0.000 1.00 0.000  5.20 10.00 1.0

 WHY PHILEV  BR SLIM    AK   PK  SK STOPIN PHIMAX PHINCL PHIDCL
.200  0.000 .10 0.30 62500. 0.0 2.0     0.  0.150  0.320 -0.010

PHINSO  RTPM  PUN  DAX DALIM DAGA DASH DTSD DTSH  CP  PSSH
 0.130  132. .015  96.   45.  20. 124. 150. 150. 1.00 .140

 EDIAN  PNLIM  PDLIM   RLIM  GRLIN VARHC  CONST  ROP VARLIM   CSF
  0.00   0.24   0.20   12.0   95.0 0.07  0.333 0.70  0.20  0.10

RES. START    100.     0.     0.     0.     0.     0.     0.
       STOP    50.     0.     0.     0.     0.     0.     0.

GAMMA - RAY STATISTICS OVER ENTIRE INTERVAL


SONIC STATISTICS OVER ENTIRE INTERVAL

ANALYSIS BY QUASI MODEL
PERMEABILITY BY TIMUR EQUATION
SP NOT USED IN SHALINESS DETERMINATION
GR COEFF. FROM STATISTICS
SONIC COEFF. FROM STATISTICS
WASAMP ROUTINE USED
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DEPTH	PERM.	POROSITY	WATER SAT.	HYCARB DENS.	CLAY VOLUME	CUM. POROSITY	CUM. HYCARB
FEET	MD	%	%	GM/CC	%	FEET	FEET
4003.0	0.2	6.1	47		49	125.76	35.28
4004.0	0.0	4.7	61		36	125.70	35.25
4013.0	0.0	5.6	96		46	125.60	35.24
4014.0	0.0	6.2	90		43	125.54	35.23
4015.0	0.0	7.1	75		37	125.48	35.23
4016.0	0.2	7.1	55		27	125.41	35.21
4017.0	0.0	4.2	64		12	125.35	35.18
4018.0	0.0	5.9	100		13	125.30	35.17
4019.0	0.0	4.1	100		37	125.24	35.17
4020.0	0.0	5.0	100		45	125.20	35.17
4021.0	0.0	4.7	100		41	125.15	35.17
4029.0	0.0	1.3	100		47	125.01	35.17
4041.0	0.2	7.6	63		12	124.81	35.12
4042.0	3	9.1	29		5	124.73	35.08
4043.0	1	8.1	34		12	124.64	35.02
4044.0	1	9.1	43		15	124.56	34.97
4045.0	0.2	10.1	77		48	124.47	34.94
4051.0	0.0	0.0	0		0	0.00	0.00
4056.0	4	12.4	47		19	124.04	34.71
4057.0	0.6	8.7	85		14	123.93	34.66
4058.0	0.5	7.1	38		29	123.85	34.62
4059.0	0.8	6.6	31		48	123.78	34.57
4063.0	0.2	7.3	89		36	123.51	34.41
4064.0	0.0	6.4	73		18	123.45	34.39
4065.0	0.0	5.7	70		15	123.38	34.37
4066.0	0.0	5.7	72		15	123.32	34.35
4067.0	0.0	3.2	100		13	123.27	34.35
4068.0	0.0	0.1	100		11	123.25	34.35
4069.0	0.0	7.0	69		25	123.23	34.35
4072.0	0.1	5.8	58		20	123.00	34.22
4073.0	0.1	5.7	64		9	122.94	34.20
4074.0	0.0	5.1	75		5	122.89	34.18
4075.0	0.1	8.3	100		0	122.83	34.17
4076.0	0.0	7.7	78		0	122.74	34.15
4077.0	2	8.1	23		3	122.66	34.12
4078.0	0.5	7.5	43		2	122.57	34.05
4079.0	0.0	7.9	100		0	122.50	34.02
4080.0	0.2	9.9	74		0	122.41	34.01
4081.0	0.2	6.8	56		1	122.33	33.99
4082.0	0.0	0.4	100		0	122.28	33.98

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
4083.0	0.0	0.0	100		4	122.27	33.98
4084.0	0.0	3.4	100		14	122.27	33.98
4086.0	0.0	3.1	100		41	122.18	33.96
4099.0	0.0	6.5	92		48	122.07	33.96
4100.0	0.0	6.8	69		30	122.00	33.94
4101.0	0.2	7.2	66		30	121.94	33.93
4102.0	0.0	6.8	71		38	121.87	33.90
4103.0	0.0	6.8	95		8	121.80	33.89
4104.0	0.3	10.1	98		4	121.72	33.89
4105.0	0.4	10.5	79		0	121.61	33.88
4106.0	0.5	8.8	61		7	121.52	33.86
4107.0	0.9	9.7	56		21	121.42	33.82
4108.0	1	9.7	51		49	121.33	33.77
4117.0	7	11.7	30		38	120.69	33.52
4118.0	9	12.5	31		22	120.57	33.44
4119.0	20	12.9	25		41	120.45	33.35
4138.0	5	9.0	19		23	119.83	33.11
4139.0	0.1	5.0	48		16	119.74	33.04
4140.0	0.0	2.8	100		16	119.69	33.03
4141.0	0.2	5.1	46		13	119.65	33.03
4142.0	0.1	6.2	61		17	119.59	32.99
4143.0	0.0	4.1	100		34	119.53	32.98
4250.0	0.0	3.4	100		49	119.23	32.98
4251.0	0.0	4.5	100		48	119.19	32.98
4252.0	0.0	7.5	67		36	119.14	32.98
4253.0	0.0	7.9	74		36	119.06	32.95
4254.0	0.0	6.2	100		38	118.99	32.93
4255.0	0.0	4.4	100		43	118.93	32.93
4256.0	0.0	2.0	100		49	118.89	32.93
4259.0	0.1	5.7	64		44	118.81	32.93
4260.0	0.0	4.5	100		48	118.75	32.92
4266.0	0.0	3.2	100		50	118.55	32.92
4271.0	0.0	1.2	100		50	118.52	32.92
4272.0	0.0	4.5	100		50	118.49	32.92
4312.0	0.0	2.5	100		49	118.25	32.92
4313.0	0.0	1.7	100		47	118.23	32.92
4322.0	0.0	4.1	100		43	118.16	32.92
4323.0	0.0	6.5	71		25	118.12	32.92

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
4324.0	0.6	9.4	62		16	118.04	32.89
4325.0	0.4	10.8	70		13	117.95	32.86
4326.0	0.1	9.1	98		22	117.83	32.83
4327.0	0.2	9.5	99		21	117.74	32.83
4328.0	0.0	8.0	86		27	117.66	32.83
4329.0	0.3	10.3	69		15	117.57	32.81
4330.0	7	15.8	58		0	117.45	32.77
4331.0	0.0	3.3	100		33	117.32	32.72
4352.0	0.0	2.2	100		41	117.26	32.72
4353.0	0.0	0.0	100		50	117.25	32.72
4355.0	0.0	2.0	100		45	117.24	32.72
4356.0	0.0	1.5	100		47	117.21	32.72
4358.0	0.0	3.2	100		41	117.17	32.72
4359.0	0.0	4.6	100		35	117.13	32.72
4360.0	0.0	4.0	100		31	117.09	32.72
4361.0	0.0	5.4	100		23	117.04	32.72
4362.0	0.0	7.2	79		18	116.99	32.72
4363.0	0.2	9.6	76		14	116.91	32.70
4364.0	0.6	11.3	79		7	116.81	32.68
4365.0	1	12.2	72		4	116.69	32.65
4366.0	2	12.7	69		4	116.57	32.61
4367.0	0.6	11.2	74		6	116.44	32.58
4368.0	0.2	9.9	81		12	116.34	32.55
4369.0	0.0	2.1	100		41	116.24	32.53
4384.0	0.0	3.3	100		38	116.21	32.53
4385.0	0.0	5.4	80		27	116.17	32.53
4386.0	0.3	8.1	65		16	116.11	32.52
4387.0	0.0	0.0	100		50	116.04	32.50
4402.0	0.0	0.4	100		32	116.03	32.50
4403.0	0.0	0.0	100		41	116.02	32.50
4404.0	0.0	0.0	100		40	116.02	32.50
4405.0	0.0	0.0	100		41	116.02	32.50
4406.0	0.0	0.5	100		43	116.02	32.50
4428.0	0.0	4.3	100		28	115.99	32.50
4429.0	0.0	0.0	100		49	115.97	32.50
4439.0	0.0	0.0	100		49	115.97	32.50
4450.0	0.0	0.6	100		44	115.96	32.50
4451.0	0.0	0.2	100		44	115.95	32.50
4452.0	0.0	0.0	100		47	115.95	32.50
4453.0	0.0	0.0	100		48	115.95	32.50

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
4454.0	0.0	0.1	100		45	115.95	32.50
4455.0	0.0	3.2	100		29	115.94	32.50
4456.0	0.0	0.9	100		39	115.91	32.50
4457.0	0.0	0.9	100		46	115.89	32.50
4462.0	0.0	3.5	100		49	115.88	32.50
4463.0	0.0	4.5	100		38	115.84	32.50
4464.0	0.3	8.0	65		23	115.79	32.49
4465.0	0.8	9.8	61		12	115.70	32.46
4466.0	1	10.5	56		8	115.60	32.42
4467.0	2	11.1	54		5	115.50	32.38
4468.0	3	12.5	53	0.5	1	115.38	32.32
4469.0	5	13.7	51	0.5	2	115.26	32.26
4470.0	2	11.5	55		10	115.12	32.19
4471.0	1	10.4	55		15	115.01	32.15
4472.0	1	9.9	56		16	114.91	32.10
4473.0	1	10.2	57		15	114.81	32.05
4474.0	0.9	9.8	56		16	114.71	32.01
4475.0	1	10.7	56		10	114.61	31.97
4476.0	2	11.0	56		10	114.50	31.92
4477.0	0.9	9.7	57		16	114.39	31.87
4478.0	1	9.8	54		17	114.29	31.83
4479.0	1	10.1	53		14	114.20	31.78
4480.0	0.6	8.9	55		17	114.10	31.74
4481.0	0.7	9.3	58		14	114.01	31.70
4482.0	2	11.3	53	0.5	7	113.92	31.66
4483.0	2	11.3	51	0.5	5	113.80	31.60
4484.0	1	10.6	54		4	113.69	31.55
4485.0	1	10.1	53		8	113.59	31.50
4486.0	1	10.2	51		7	113.49	31.45
4487.0	0.7	9.0	54		8	113.38	31.40
4488.0	0.2	7.2	58		14	113.30	31.36
4489.0	0.0	7.4	70		21	113.23	31.33
4491.0	0.0	0.0	100		50	113.19	31.32
4492.0	0.0	0.0	100		46	113.19	31.32
4509.0	0.0	2.3	100		41	113.18	31.32
4510.0	0.0	2.1	100		32	113.15	31.32
4511.0	0.0	0.2	100		45	113.14	31.32
4517.0	0.0	0.0	100		48	113.13	31.32
4536.0	0.0	1.3	100		47	113.10	31.32
4537.0	0.0	1.9	100		47	113.09	31.32
4539.0	0.0	0.1	100		49	113.03	31.32
4540.0	0.0	0.0	100		47	113.03	31.32

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
4544.0	0.0	1.1	100		47	113.02	31.32
4548.0	0.0	0.9	100		46	113.00	31.32
4549.0	0.0	3.1	100		24	112.99	31.32
4550.0	0.0	3.3	100		29	112.96	31.32
4566.0	0.0	0.3	100		47	112.94	31.32
4567.0	0.0	2.6	100		30	112.93	31.32
4568.0	0.0	4.3	100		22	112.90	31.32
4569.0	0.0	4.3	100		30	112.85	31.31
4570.0	0.0	0.0	100		48	112.83	31.31
4571.0	0.0	0.0	100		46	112.83	31.31
4576.0	0.0	0.0	100		49	112.83	31.31
4578.0	0.0	0.0	100		47	112.83	31.31
4579.0	0.0	0.0	100		50	112.83	31.31
4590.0	0.0	0.0	100		49	112.79	31.31
4591.0	0.0	1.4	100		46	112.78	31.31
4592.0	0.0	1.3	100		43	112.76	31.31
4593.0	0.0	0.1	100		42	112.75	31.31
4594.0	0.0	0.0	100		43	112.75	31.31
4595.0	0.0	0.0	100		43	112.75	31.31
4596.0	0.0	2.6	100		40	112.75	31.31
4597.0	0.0	2.7	100		42	112.72	31.31
4598.0	0.0	2.7	100		40	112.70	31.31
4599.0	0.0	3.2	100		33	112.67	31.31
4600.0	0.0	1.5	100		47	112.64	31.31
4601.0	0.0	1.1	100		48	112.63	31.31
4602.0	0.0	1.4	100		47	112.61	31.31
4603.0	0.0	3.3	100		43	112.59	31.31
4604.0	0.0	4.2	100		44	112.55	31.31
4605.0	0.0	5.7	82		41	112.51	31.31
4606.0	0.0	6.8	67		38	112.44	31.30
4607.0	0.1	6.9	65		39	112.37	31.27
4608.0	0.0	6.8	82		38	112.31	31.25
4609.0	0.1	8.5	85		29	112.23	31.23
4610.0	0.2	9.6	76		23	112.14	31.22
4611.0	0.1	8.3	79		25	112.05	31.20
4612.0	0.3	7.8	63		30	111.97	31.18
4613.0	0.2	7.4	61		30	111.89	31.14
4614.0	0.0	7.3	83		31	111.81	31.12
4615.0	0.0	7.0	88		33	111.74	31.11
4616.0	0.0	6.3	72		36	111.67	31.10
4617.0	0.1	5.8	65		40	111.61	31.08
4618.0	0.1	6.0	60		40	111.55	31.06

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
4619.0	0.1	6.0	55		42	111.49	31.03
4620.0	0.0	5.0	87		44	111.43	31.01
4621.0	0.0	4.9	100		37	111.39	31.00
4622.0	0.0	5.9	100		35	111.33	31.00
4623.0	0.0	4.4	100		37	111.28	31.00
4624.0	0.0	3.5	100		39	111.23	31.00
4626.0	0.0	2.9	100		40	111.19	31.00
4627.0	0.0	4.3	100		30	111.16	31.00
4628.0	0.0	4.5	98		29	111.12	31.00
4629.0	0.0	2.1	100		42	111.08	31.00
4632.0	0.0	0.5	100		49	111.06	31.00
4633.0	0.0	1.2	100		45	111.06	31.00
4664.0	0.0	0.1	100		49	111.01	31.00
4665.0	0.0	0.1	100		47	111.00	31.00
4681.0	0.0	0.2	100		48	111.00	31.00
4682.0	0.0	0.0	100		47	111.00	31.00
4684.0	0.0	0.0	100		46	111.00	31.00
4685.0	0.0	1.2	100		41	111.00	31.00
4686.0	0.0	0.8	100		41	110.99	31.00
4687.0	0.0	0.8	100		35	110.98	31.00
4688.0	0.0	3.1	100		36	110.97	31.00
4691.0	0.0	3.2	100		39	110.91	31.00
4692.0	0.0	1.1	100		43	110.88	31.00
4693.0	0.0	0.4	100		47	110.87	31.00
4700.0	0.0	1.9	100		49	110.82	31.00
4701.0	0.0	1.9	100		44	110.80	31.00
4709.0	0.0	2.9	100		37	110.74	31.00
4710.0	0.0	1.7	100		42	110.72	31.00
4711.0	0.0	0.7	100		49	110.70	31.00
4712.0	0.0	2.5	100		0	110.70	31.00
4715.0	0.0	1.9	100		46	110.65	31.00
4716.0	0.0	2.2	100		38	110.63	31.00
4717.0	0.0	0.0	100		42	110.62	31.00
4718.0	0.0	0.0	100		42	110.62	31.00
4719.0	0.0	2.3	100		33	110.62	31.00
4720.0	0.0	5.2	80		17	110.58	31.00
4721.0	0.1	6.5	64		15	110.53	30.99
4722.0	0.0	5.7	75		17	110.47	30.96
4723.0	0.0	6.8	100		18	110.41	30.96

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
4733.0	0.0	0.0	100		43	110.26	30.96
4734.0	0.0	0.2	100		41	110.26	30.96
4735.0	0.0	0.2	100		48	110.25	30.96
4738.0	0.0	3.0	100		48	110.23	30.96
4760.0	0.0	0.0	100		47	110.15	30.96
4761.0	0.0	0.0	100		50	110.15	30.96
4762.0	0.0	0.3	100		49	110.15	30.96
4770.0	0.0	2.0	100		41	110.06	30.96
4771.0	0.0	0.3	100		47	110.04	30.96
4772.0	0.0	0.0	100		42	110.04	30.96
4773.0	0.0	0.2	100		40	110.04	30.96
4774.0	0.0	0.0	100		39	110.04	30.96
4775.0	0.0	0.0	100		43	110.04	30.96
4776.0	0.0	0.0	100		41	110.04	30.96
4777.0	0.0	0.2	100		46	110.04	30.96
4778.0	0.0	3.1	100		29	110.03	30.96
4779.0	0.0	3.2	100		36	110.00	30.96
4780.0	0.0	0.6	100		49	109.97	30.96
4781.0	0.0	0.0	100		49	109.97	30.96
4790.0	0.0	2.7	100		43	109.92	30.96
4791.0	0.0	5.8	75		25	109.89	30.96
4792.0	0.0	6.7	70		19	109.83	30.94
4793.0	0.1	6.7	61		23	109.76	30.92
4794.0	0.0	5.6	69		19	109.70	30.90
4795.0	0.0	5.0	98		21	109.64	30.88
4796.0	0.0	3.6	100		29	109.60	30.88
4797.0	0.0	4.1	100		25	109.56	30.88
4798.0	0.0	3.9	100		36	109.52	30.88
4812.0	0.0	2.0	100		42	109.36	30.88
4827.0	0.0	1.0	100		48	109.31	30.88
4828.0	0.0	3.0	100		39	109.30	30.88
4829.0	0.0	1.9	100		40	109.27	30.88
4830.0	0.0	1.5	100		47	109.25	30.88
4831.0	0.0	1.5	100		48	109.24	30.88
4832.0	0.0	3.0	100		40	109.22	30.88
4833.0	0.0	2.0	100		46	109.19	30.88
4835.0	0.0	0.0	100		50	109.17	30.88
4836.0	0.0	0.7	100		47	109.17	30.88
4852.0	0.0	3.1	100		32	109.12	30.88

DEPTH FEET	PERM, MD	POROSITY %	WATER SAT, %	HYCARB DENS, GM/CC	CLAY VOLUME %	CUM, POROSITY FEET	CUM, HYCARB FEET
4853.0	0.0	2.4	100		18	109.10	30.88
4854.0	0.0	0.0	100		17	109.08	30.88
4855.0	0.0	0.3	100		15	109.08	30.88
4856.0	0.0	3.1	100		9	109.07	30.88
4857.0	0.0	3.8	99		11	109.04	30.88
4858.0	0.0	4.8	55		7	109.00	30.87
4859.0	0.1	5.9	54		6	108.94	30.85
4860.0	0.1	5.8	51		9	108.89	30.82
4861.0	0.0	3.2	100		14	108.83	30.80
4862.0	0.0	0.4	100		24	108.81	30.80
4863.0	0.0	0.1	100		28	108.81	30.80
4864.0	0.0	0.0	100		27	108.81	30.80
4865.0	0.0	0.0	100		19	108.81	30.80
4866.0	0.0	0.0	100		17	108.81	30.80
4867.0	0.0	0.0	100		22	108.81	30.80
4868.0	0.0	1.5	100		20	108.81	30.80
4869.0	0.0	2.3	100		15	108.79	30.80
4870.0	0.0	2.7	100		13	108.77	30.80
4871.0	0.0	5.3	100		28	108.73	30.80
4880.0	0.0	3.5	100		39	108.62	30.80
4881.0	0.0	3.1	100		23	108.59	30.80
4882.0	0.1	6.2	57		17	108.55	30.80
4883.0	2	11.1	51		9	108.48	30.76
4884.0	0.0	0.0	100		42	108.37	30.71
4885.0	0.0	0.1	100		49	108.37	30.71
4893.0	0.0	0.1	100		42	108.26	30.71
4894.0	0.0	0.0	100		41	108.26	30.71
4895.0	0.0	0.0	100		49	108.26	30.71
4901.0	0.0	0.0	100		48	108.26	30.71
4905.0	0.0	2.3	100		36	108.24	30.71
4906.0	0.0	0.0	100		44	108.20	30.71
4907.0	0.0	0.4	100		49	108.20	30.71
4916.0	0.1	5.6	58		23	108.12	30.71
4917.0	0.0	3.3	100		21	108.07	30.69
4918.0	0.0	4.4	100		19	108.04	30.69
4919.0	0.1	6.4	55		21	107.99	30.68
4920.0	0.9	9.4	51		11	107.92	30.65
4921.0	6	13.9	50		0	107.82	30.60
4922.0	0.0	0.2	100		40	107.69	30.54
4936.0	0.0	3.3	100		38	107.56	30.54
4937.0	0.0	4.3	100		33	107.52	30.54
4938.0	0.0	3.2	100		43	107.48	30.54

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
4939.0	0.0	3.7	100		46	107.45	30.54
4940.0	0.0	4.1	100		37	107.41	30.54
4941.0	0.1	5.8	57		26	107.36	30.54
4942.0	1	11.1	65		6	107.29	30.51
4943.0	0.0	0.0	100		43	107.17	30.48
4947.0	0.0	2.4	100		49	107.16	30.48
4948.0	0.0	3.5	100		36	107.13	30.48
4949.0	0.0	1.4	100		40	107.10	30.48
4950.0	0.0	3.1	100		36	107.09	30.48
4951.0	0.0	1.9	100		50	107.05	30.48
4953.0	0.0	3.1	100		49	107.01	30.48
4957.0	0.0	2.5	100		43	106.95	30.48
4958.0	0.0	1.7	100		46	106.93	30.48
4959.0	0.0	2.7	100		41	106.91	30.48
4960.0	0.0	3.4	100		37	106.88	30.48
4961.0	0.0	4.4	100		34	106.85	30.48
4962.0	0.0	3.9	100		36	106.80	30.48
4963.0	0.0	2.3	100		49	106.77	30.48
4965.0	0.0	4.0	100		47	106.73	30.48
4966.0	0.0	4.3	100		50	106.69	30.48
4968.0	0.0	0.1	100		49	106.64	30.48
4969.0	0.0	1.4	100		42	106.64	30.48
4970.0	0.0	4.4	100		34	106.62	30.48
4971.0	0.1	6.0	55		25	106.57	30.47
4972.0	0.1	5.8	60		19	106.51	30.44
4973.0	0.0	5.4	72		22	106.45	30.42
4974.0	0.0	3.8	100		39	106.40	30.40
4975.0	0.0	3.1	100		43	106.36	30.40
4977.0	0.0	0.0	100		14	106.33	30.40
4981.0	0.0	0.0	100		49	106.33	30.40
4983.0	0.0	5.0	97		30	106.33	30.40
4984.0	0.3	8.2	65		22	106.27	30.39
4985.0	2	10.7	48		20	106.18	30.35
4986.0	8	11.5	27	0.1	20	106.07	30.29
4987.0	9	13.4	35		0	105.95	30.21
4988.0	60	20.6	37		0	105.80	30.11
4989.0	0.0	1.4	100		33	105.69	30.04
4994.0	0.0	1.8	100		48	105.64	30.04
4995.0	0.0	5.3	72		27	105.62	30.04

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
5008.0	0.0	0.7	100		49	105.53	30.03
5018.0	0.0	2.9	100		29	105.50	30.03
5019.0	0.0	2.7	100		29	105.47	30.03
5020.0	0.0	0.1	100		47	105.45	30.03
5026.0	0.0	3.5	100		46	105.39	30.03
5051.0	0.0	3.6	100		45	105.11	30.03
5062.0	0.0	3.5	100		48	104.95	30.03
5070.0	0.0	3.6	100		43	104.83	30.03
5071.0	0.0	3.6	100		40	104.79	30.03
5072.0	0.0	2.9	100		47	104.76	30.03
5073.0	0.0	3.9	99		43	104.73	30.03
5141.0	0.0	4.0	100		48	104.22	30.03
5143.0	0.0	3.6	100		50	104.15	30.03
5144.0	0.1	5.0	40		40	104.11	30.02
5145.0	0.0	3.5	100		48	104.06	30.01
5148.0	0.0	4.8	49		49	103.97	30.01
5149.0	0.7	8.0	40		28	103.91	29.97
5150.0	0.6	7.8	41		28	103.83	29.93
5151.0	0.6	7.7	40		30	103.76	29.88
5152.0	0.7	7.9	40		30	103.68	29.84
5153.0	0.8	8.0	38		34	103.60	29.79
5154.0	1	8.1	36		38	103.52	29.74
5155.0	1	8.3	31		41	103.44	29.68
5156.0	0.5	6.8	33		38	103.36	29.63
5157.0	0.3	5.9	30		38	103.29	29.58
5158.0	0.0	4.1	96		41	103.24	29.55
5178.0	0.0	5.0	53		49	103.05	29.53
5185.0	0.1	4.9	37		41	102.86	29.50
5206.0	0.0	0.7	100		50	102.56	29.47
5240.0	0.0	3.1	100		46	102.47	29.47
5249.0	0.0	2.1	100		49	102.39	29.47
5250.0	0.0	3.3	100		46	102.36	29.47
5258.0	0.0	4.5	99		44	102.29	29.47

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
5259.0	0.0	4.5	87		49	102.24	29.47
5272.0	0.0	3.6	100		46	102.04	29.47
5273.0	0.0	3.1	100		48	102.00	29.47
5280.0	0.0	3.9	100		40	101.91	29.44
5281.0	0.0	3.7	100		47	101.87	29.44
5282.0	0.0	4.5	97		39	101.83	29.44
5284.0	0.0	4.3	94		42	101.74	29.42
5285.0	0.0	2.0	100		49	101.70	29.42
5295.0	0.1	5.8	63		47	101.50	29.42
5296.0	0.9	7.8	34		24	101.43	29.39
5297.0	1	7.2	23		18	101.35	29.34
5298.0	0.8	6.6	26		17	101.28	29.28
5299.0	0.5	5.8	23		30	101.21	29.23
5300.0	0.0	4.5	55		44	101.16	29.19
5305.0	0.2	6.2	42		43	101.04	29.17
5306.0	0.2	5.8	33		40	100.98	29.13
5320.0	0.0	3.5	100		49	100.88	29.09
5321.0	0.0	3.9	97		41	100.84	29.09
5334.0	0.0	4.9	68		37	100.73	29.09
5335.0	0.0	4.2	94		38	100.68	29.08
5336.0	0.4	6.2	29		31	100.64	29.06
5337.0	0.5	6.1	27		30	100.57	29.01
5338.0	0.0	3.4	100		45	100.52	28.98
5361.0	0.0	5.3	92		37	100.39	28.98
5362.0	0.1	5.2	47		27	100.34	28.96
5363.0	0.0	3.5	100		33	100.29	28.95
5364.0	0.2	5.5	32		28	100.25	28.94
5365.0	0.1	5.1	34		34	100.20	28.90
5369.0	0.0	3.0	100		49	100.09	28.88
5370.0	0.0	3.5	100		44	100.06	28.88
5371.0	0.1	4.8	38		39	100.03	28.88
5372.0	0.0	3.4	100		49	99.98	28.86
5375.0	0.2	5.3	34		40	99.87	28.83
5376.0	0.0	4.4	47		41	99.82	28.80
5377.0	0.0	4.1	93		43	99.78	28.78
5398.0	0.0	1.8	100		46	99.52	28.78

```
ISS =  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
       0 0 0 1 0 1 1 0  2  0  0  0  0  0  0  0  1  0  0  0  0

INPUT PARAMETERS FROM  7000. TO  5400.

 WMUD XLIT BITSZ  BHT BHTDEP SUFT   RMF RMFT ROMFS PHIMFS DASIL
 9.8 0.50  7.88 180.  9120.  60.  0.05  65. 1.174  0.098 0.600

  SPCK  DSPCK RODC DELRGN START STOPLG ZSPNL  BGN ZSPDL   REC  RESH CSS
    0.     0. 2.84  0.20  9115.  4000. 0.000 1.00 0.000  8.20 15.80 1.0

  WHY PHILEV  BR SLIM    AK   PK  SK STOPIN PHIMAX PHINCL PHIDCL
 .200  0.000 .10 0.30 62500. 6.0 2.0  5400.  0.120  0.300 -0.025

 PHINSO  RTPM  PUN  DAX DALIN DAGA DASH DTSD DTSH  CP  PSSH
 0.090  132. .015  90.   45.  20. 117. 150. 150. 1.00 .230

 EDIAN  PNLIM  PDLIM   RLIM  GRLIM VARMC  CONST  RUP VARLIM   CSF
  0.00   0.24   0.20   12.0   98.0 0.07  0.333 0.70  0.20  0.10

REG. START    100.     0.     0.     0.     0.     0.     0.
     STOP      50.     0.     0.     0.     0.     0.     0.

GAMMA - RAY STATISTICS OVER ENTIRE INTERVAL


SONIC STATISTICS OVER ENTIRE INTERVAL

ANALYSIS BY QUASI MODEL
PERMEABILITY BY TIMUR EQUATION
SP NOT USED IN SHALINESS DETERMINATION
GR COEFF. FROM STATISTICS
SONIC COEFF. FROM STATISTICS
WASAMP ROUTINE USED
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DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
5407.0	0.0	2.8	100		48	99.41	28.78
5423.0	0.0	0.0	100		40	99.23	28.78
5424.0	0.0	0.0	100		44	99.23	28.78
5440.0	0.0	3.4	100		44	99.13	28.78
5441.0	0.0	4.0	100		44	99.10	28.78
5442.0	0.0	3.6	100		43	99.06	28.78
5470.0	0.0	4.3	100		17	98.94	28.77
5471.0	0.0	4.8	50		16	98.89	28.76
5472.0	0.0	3.9	100		21	98.85	28.74
5473.0	0.0	2.5	100		27	98.82	28.74
5478.0	0.0	3.3	100		38	98.76	28.74
5479.0	0.0	2.0	100		42	98.74	28.74
5480.0	0.0	4.1	59		32	98.71	28.74
5481.0	0.0	3.9	70		38	98.67	28.72
5500.0	0.0	4.1	75		41	98.60	28.72
5501.0	0.0	1.5	100		39	98.56	28.71
5504.0	0.0	4.0	57		35	98.51	28.71
5505.0	0.0	3.1	100		34	98.47	28.70
5506.0	0.0	0.9	100		46	98.44	28.70
5523.0	0.0	4.4	56		32	98.38	28.68
5524.0	0.0	3.2	100		36	98.34	28.67
5525.0	0.0	2.3	100		36	98.31	28.67
5526.0	0.0	0.0	100		50	98.29	28.67
5532.0	0.0	1.7	100		47	98.29	28.67
5533.0	0.0	1.2	100		44	98.27	28.67
5534.0	0.0	0.3	100		49	98.26	28.67
5536.0	0.0	3.4	100		39	98.24	28.67
5537.0	0.0	3.1	100		33	98.20	28.67
5538.0	0.0	2.4	100		30	98.17	28.67
5539.0	0.0	0.3	100		47	98.15	28.67
5545.0	0.0	4.7	58		37	98.13	28.67
5546.0	0.1	5.0	41		17	98.08	28.65
5547.0	0.0	4.0	74		19	98.04	28.62
5548.0	0.0	1.2	100		48	98.00	28.62
5552.0	0.0	2.0	100		45	97.98	28.62
5553.0	0.0	1.1	100		48	97.96	28.62
5561.0	0.0	1.5	100		48	97.95	28.62

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
5562.0	0.0	2.0	100		42	97.94	28.62
5574.0	0.0	3.3	100		38	97.90	28.62
5575.0	0.0	3.4	100		35	97.87	28.62
5576.0	0.0	2.5	100		43	97.84	28.62
5578.0	0.0	0.2	100		49	97.80	28.62
5579.0	0.0	1.0	100		43	97.80	28.62
5580.0	0.0	0.1	100		47	97.79	28.62
5587.0	0.0	0.8	100		28	97.79	28.62
5588.0	0.0	4.7	60		17	97.78	28.62
5589.0	0.0	0.2	100		41	97.74	28.60
5596.0	0.0	2.6	100		33	97.74	28.60
5597.0	0.0	1.3	100		37	97.69	28.58
5598.0	0.0	0.0	100		44	97.68	28.58
5599.0	0.0	0.0	100		43	97.68	28.58
5600.0	0.7	8.2	44		13	97.64	28.56
5601.0	0.5	7.8	46		14	97.56	28.51
5602.0	0.2	6.3	42		29	97.48	28.47
5603.0	0.0	3.9	100		41	97.43	28.44
5606.0	0.0	3.2	100		47	97.34	28.44
5607.0	0.0	2.8	100		0	97.31	28.44
5618.0	0.0	0.1	100		46	97.29	28.44
5619.0	0.0	0.3	100		42	97.28	28.44
5620.0	0.0	1.0	100		43	97.28	28.44
5621.0	0.0	1.9	100		41	97.27	28.44
5622.0	0.0	0.9	100		40	97.25	28.44
5625.0	0.0	1.6	100		38	97.22	28.44
5626.0	0.0	1.1	100		44	97.21	28.44
5633.0	0.0	0.8	100		50	97.17	28.44
5634.0	0.0	0.5	100		47	97.16	28.44
5635.0	0.0	0.1	100		43	97.15	28.44
5641.0	0.0	3.0	100		48	97.15	28.44
5642.0	0.0	4.5	58		24	97.11	28.44
5643.0	0.0	4.5	60		26	97.07	28.42
5644.0	0.0	3.1	100		36	97.03	28.41
5645.0	0.0	0.9	100		48	97.00	28.41
5662.0	0.0	4.4	90		49	96.97	28.41
5663.0	0.1	5.7	61		35	96.92	28.39
5664.0	0.6	9.4	64		11	96.86	28.38

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
5665.0	8	14.4	45		7	96.76	28.34
5666.0	7	14.1	48		8	96.62	28.26
5667.0	0.4	8.5	64		13	96.48	28.19
5668.0	0.1	6.2	51		36	96.40	28.16
5677.0	0.0	3.9	89		29	96.29	28.13
5678.0	0.0	0.7	100		48	96.26	28.13
5680.0	0.0	1.2	100		48	96.25	28.13
5689.0	0.1	5.4	60		40	96.19	28.13
5690.0	0.1	5.3	53		37	96.13	28.11
5691.0	0.0	3.1	100		47	96.09	28.09
5708.0	0.0	0.0	100		43	96.05	28.09
5711.0	0.0	4.4	99		42	96.00	28.09
5712.0	0.0	3.3	100		43	95.96	28.09
5713.0	0.0	3.5	100		48	95.93	28.09
5714.0	0.0	4.1	84		35	95.89	28.09
5715.0	0.0	0.7	100		45	95.86	28.08
5718.0	0.0	0.0	100		45	95.85	28.08
5719.0	0.0	0.3	100		45	95.85	28.08
5730.0	0.0	3.3	100		41	95.83	28.08
5731.0	0.0	3.0	100		50	95.79	28.08
5736.0	0.0	2.6	100		33	95.75	28.08
5737.0	0.0	0.3	100		48	95.74	28.08
5740.0	0.0	0.7	100		26	95.73	28.08
5741.0	0.0	2.1	100		25	95.72	28.08
5742.0	0.0	1.6	100		27	95.70	28.08
5743.0	0.0	3.8	76		10	95.67	28.08
5744.0	0.0	5.2	100		11	95.63	28.07
5745.0	0.0	3.5	100		32	95.58	28.07
5753.0	0.0	2.4	100		45	95.44	28.07
5754.0	0.0	2.1	100		48	95.41	28.07
5759.0	0.0	1.1	100		42	95.37	28.07
5760.0	0.0	3.0	100		37	95.35	28.07
5761.0	0.0	0.6	100		27	95.32	28.07
5762.0	0.0	0.5	100		19	95.32	28.07
5763.0	0.0	3.8	93		15	95.30	28.07
5764.0	0.0	3.0	100		21	95.27	28.06
5765.0	0.0	2.1	100		32	95.24	28.06

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
5766.0	0.0	2.5	100		27	95.22	28.06
5767.0	0.0	0.5	100		34	95.19	28.06
5768.0	0.0	1.7	100		37	95.19	28.06
5774.0	0.0	4.1	98		46	95.09	28.06
5775.0	0.0	3.3	100		42	95.06	28.06
5776.0	0.0	2.1	100		49	95.02	28.06
5778.0	0.0	0.4	100		36	95.00	28.06
5779.0	0.0	0.0	100		42	95.00	28.06
5781.0	0.0	0.1	100		45	95.00	28.06
5782.0	0.0	2.1	100		41	95.00	28.06
5783.0	0.0	3.3	100		44	94.97	28.06
5784.0	0.0	4.7	60		17	94.94	28.06
5785.0	0.1	5.5	55		5	94.89	28.04
5786.0	0.3	7.8	59		7	94.83	28.02
5787.0	0.4	8.2	58		13	94.75	27.98
5788.0	0.5	8.4	57		11	94.66	27.95
5789.0	0.0	5.6	87		27	94.59	27.92
5796.0	0.0	2.6	100		45	94.49	27.91
5797.0	0.0	1.0	100		49	94.47	27.91
5813.0	0.0	5.0	57		45	94.37	27.91
5814.0	0.0	4.9	64		46	94.32	27.89
5815.0	0.0	4.2	98		48	94.28	27.88
5816.0	0.0	3.3	100		50	94.24	27.88
5817.0	0.0	2.0	100		45	94.21	27.88
5822.0	0.0	0.0	100		44	94.19	27.88
5837.0	0.0	3.8	99		46	94.00	27.88
5838.0	0.0	3.0	100		49	93.96	27.88
5846.0	0.0	0.0	100		42	93.87	27.88
5847.0	0.0	0.1	100		45	93.87	27.88
5848.0	0.0	0.5	100		49	93.86	27.88
5857.0	0.1	4.9	47		27	93.84	27.88
5858.0	0.0	3.6	96		15	93.80	27.86
5859.0	0.0	2.9	100		22	93.76	27.86
5860.0	0.0	0.7	100		37	93.73	27.86
5864.0	0.0	0.9	100		46	93.71	27.86
5865.0	0.0	2.8	100		36	93.70	27.86
5866.0	0.0	3.4	100		31	93.67	27.86
5867.0	0.0	2.4	100		34	93.63	27.86

DEPTH	PERM.	POROSITY	WATER SAT.	HYCARB DENS.	CLAY VOLUME	CUM. POROSITY	CUM. HYCARB
FEET	MD	%	%	GM/CC	%	FEET	FEET
5873.0	0.0	2.8	100		33	93.61	27.86
5874.0	0.0	2.6	100		41	93.58	27.86
5877.0	0.0	0.2	100		42	93.55	27.86
5878.0	0.0	0.0	100		36	93.55	27.86
5879.0	0.0	0.0	100		41	93.55	27.86
5882.0	0.0	3.1	100		31	93.53	27.86
5883.0	0.0	1.4	100		36	93.50	27.86
5884.0	0.0	2.6	100		37	93.49	27.86
5885.0	0.0	0.0	100		40	93.47	27.86
5886.0	0.0	0.7	100		50	93.46	27.86
5889.0	0.0	0.0	100		44	93.43	27.86
5890.0	0.0	0.0	100		48	93.43	27.86
5892.0	0.0	0.3	100		48	93.43	27.86
5893.0	0.0	0.8	100		42	93.42	27.86
5894.0	0.0	0.0	100		48	93.41	27.86
5903.0	0.0	3.2	100		42	93.36	27.86
5904.0	0.0	2.6	100		19	93.32	27.85
5905.0	0.0	0.9	100		34	93.30	27.85
5906.0	0.0	0.7	100		43	93.29	27.85
5907.0	0.0	2.1	100		41	93.28	27.85
5908.0	0.0	2.2	100		38	93.26	27.85
5911.0	0.0	2.3	100		40	93.22	27.85
5915.0	0.0	0.2	100		44	93.19	27.85
5916.0	0.0	0.1	100		47	93.19	27.85
5918.0	0.0	0.0	100		46	93.19	27.85
5919.0	0.0	1.1	100		31	93.19	27.85
5920.0	0.0	0.9	100		37	93.17	27.85
5923.0	0.0	2.7	100		39	93.17	27.85
5924.0	0.1	4.9	47		10	93.13	27.83
5925.0	0.0	0.0	100		38	93.10	27.82
5931.0	0.0	3.7	100		39	93.07	27.82
5932.0	0.0	2.5	100		38	93.04	27.82
5936.0	0.0	0.1	100		49	93.02	27.82
5937.0	0.0	2.8	100		40	93.01	27.82
5938.0	0.0	2.3	100		48	92.99	27.82
5944.0	0.1	5.6	64		33	92.94	27.82

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
5945.0	0.0	1.6	100		12	92.90	27.81
5946.0	0.0	0.0	100		18	92.89	27.81
5947.0	0.0	0.0	100		29	92.89	27.81
5948.0	0.0	0.0	100		41	92.89	27.81
5949.0	0.0	0.0	100		39	92.89	27.81
5950.0	0.0	0.0	100		44	92.89	27.81
5953.0	0.0	0.7	100		46	92.89	27.81
5954.0	0.0	0.1	100		47	92.88	27.81
5956.0	0.0	3.0	100		43	92.85	27.81
5957.0	0.0	2.8	100		48	92.82	27.81
5958.0	0.0	0.8	100		50	92.79	27.81
5959.0	0.0	0.0	100		44	92.79	27.81
5977.0	0.0	1.5	100		40	92.76	27.81
5978.0	0.0	0.0	100		38	92.76	27.81
5979.0	0.0	0.0	100		36	92.76	27.81
5980.0	0.0	0.0	100		38	92.76	27.81
5981.0	0.0	0.5	100		37	92.76	27.81
5982.0	0.0	2.0	100		31	92.75	27.81
5983.0	0.0	2.8	100		28	92.73	27.81
5984.0	0.0	2.8	100		25	92.70	27.81
5985.0	0.0	4.2	72		18	92.67	27.81
5986.0	0.0	4.0	94		15	92.63	27.79
5987.0	0.0	2.8	100		20	92.59	27.79
5988.0	0.0	3.3	100		26	92.56	27.79
5989.0	0.0	4.0	86		23	92.53	27.79
5990.0	0.2	7.1	64		14	92.48	27.78
5991.0	0.2	9.5	73		7	92.40	27.75
5992.0	0.9	11.4	70		1	92.30	27.73
5993.0	2	12.4	63		0	92.18	27.69
5994.0	2	12.4	64		0	92.06	27.64
5995.0	2	12.4	67		0	91.94	27.60
5996.0	0.8	11.2	70		2	91.81	27.56
5997.0	0.3	8.2	64		9	91.71	27.53
5998.0	0.0	4.2	68		12	91.63	27.50
5999.0	0.0	1.7	100		22	91.60	27.49
6000.0	0.0	0.0	100		32	91.59	27.49
6001.0	0.0	0.0	100		26	91.59	27.49
6002.0	0.0	0.2	100		23	91.59	27.49
6003.0	0.0	0.4	100		28	91.58	27.49
6008.0	0.0	1.0	100		42	91.58	27.49
6009.0	0.0	2.2	100		40	91.56	27.49
6018.0	0.0	3.7	78		15	91.50	27.49
6019.0	0.0	1.1	100		20	91.47	27.48

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
6020.0	0.0	0.7	100		29	91.46	27.48
6021.0	0.0	1.1	100		42	91.46	27.48
6022.0	0.0	0.8	100		49	91.45	27.48
6023.0	0.0	1.5	100		47	91.43	27.48
6039.0	0.0	0.1	100		38	91.39	27.48
6040.0	0.0	0.0	100		37	91.39	27.48
6041.0	0.0	0.0	100		46	91.39	27.48
6042.0	0.0	0.0	100		42	91.39	27.48
6043.0	0.0	1.3	100		36	91.39	27.48
6044.0	0.0	1.2	100		27	91.37	27.48
6045.0	0.0	0.3	100		43	91.36	27.48
6051.0	0.0	0.1	100		47	91.36	27.48
6052.0	0.0	0.0	100		37	91.36	27.48
6053.0	0.0	0.0	100		39	91.36	27.48
6054.0	0.0	0.0	100		40	91.36	27.48
6055.0	0.0	0.0	100		44	91.36	27.48
6056.0	0.0	0.0	100		49	91.36	27.48
6057.0	0.0	0.0	100		40	91.36	27.48
6058.0	0.0	1.0	100		27	91.35	27.48
6059.0	0.0	1.5	100		33	91.34	27.48
6060.0	0.0	0.4	100		50	91.33	27.48
6064.0	0.0	2.9	100		41	91.32	27.48
6065.0	0.0	4.2	100		33	91.28	27.48
6066.0	0.0	4.7	70		22	91.24	27.48
6067.0	0.0	2.6	100		20	91.19	27.47
6068.0	0.0	0.0	100		34	91.18	27.47
6071.0	0.0	0.0	100		33	91.18	27.47
6072.0	0.0	0.0	100		33	91.18	27.47
6073.0	0.0	0.1	100		41	91.18	27.47
6077.0	0.0	3.1	100		40	91.15	27.47
6078.0	0.0	2.9	100		36	91.12	27.47
6079.0	0.0	3.3	100		25	91.09	27.47
6080.0	0.0	2.1	100		12	91.04	27.47
6081.0	0.0	2.6	100		12	91.04	27.47
6082.0	0.0	4.2	82		10	91.01	27.47
6083.0	0.0	4.2	73		6	90.96	27.45
6084.0	0.0	3.3	100		10	90.92	27.45
6085.0	0.0	2.5	100		16	90.89	27.45
6086.0	0.0	2.4	100		23	90.87	27.45
6087.0	0.0	0.0	100		44	90.85	27.45
6097.0	0.0	0.3	100		41	90.83	27.45
6101.0	0.0	1.4	100		38	90.79	27.45

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
6102.0	0.0	0.1	100		36	90.78	27.45
6103.0	0.0	0.0	100		47	90.78	27.45
6104.0	0.0	0.0	100		44	90.78	27.45
6105.0	0.0	1.4	100		28	90.78	27.45
6106.0	0.0	2.6	100		23	90.76	27.45
6107.0	0.0	1.9	100		33	90.73	27.45
6108.0	0.0	0.2	100		38	90.72	27.45
6109.0	0.0	0.0	100		24	90.72	27.45
6110.0	0.0	2.3	100		11	90.71	27.45
6111.0	0.0	3.5	98		8	90.68	27.45
6112.0	0.1	6.0	60		5	90.64	27.44
6113.0	0.0	0.3	100		43	90.57	27.42
6117.0	0.0	4.1	99		44	90.57	27.42
6118.0	0.0	1.7	100		23	90.53	27.42
6119.0	0.0	0.0	100		27	90.52	27.42
6120.0	0.0	0.0	100		38	90.52	27.42
6121.0	0.0	1.6	100		37	90.52	27.42
6122.0	0.0	2.7	100		37	90.50	27.42
6127.0	0.0	4.2	100		48	90.43	27.42
6128.0	0.0	2.1	100		24	90.40	27.42
6129.0	0.0	0.2	100		13	90.38	27.42
6130.0	0.0	0.3	100		20	90.38	27.42
6131.0	0.0	0.0	100		38	90.38	27.42
6133.0	0.0	0.0	100		37	90.38	27.42
6134.0	0.0	0.0	100		27	90.38	27.42
6135.0	0.0	1.0	100		27	90.38	27.42
6136.0	0.0	0.7	100		37	90.36	27.42
6139.0	0.0	0.0	100		34	90.36	27.42
6140.0	0.0	4.0	75		28	90.35	27.42
6141.0	0.0	2.5	100		26	90.31	27.41
6142.0	0.0	2.7	100		28	90.29	27.41
6143.0	0.0	0.2	100		46	90.26	27.41
6146.0	0.0	0.0	100		50	90.26	27.41
6147.0	0.0	0.3	100		41	90.25	27.41
6153.0	0.0	0.4	100		41	90.23	27.41
6154.0	0.0	0.0	100		43	90.23	27.41
6155.0	0.0	1.4	100		47	90.23	27.41
6156.0	0.0	3.1	100		40	90.21	27.41
6157.0	0.0	1.1	100		48	90.18	27.41
6158.0	0.0	0.0	100		46	90.17	27.41
6159.0	0.0	0.6	100		48	90.17	27.41
6167.0	0.0	3.5	100		34	90.14	27.41

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
6168.0	0.0	3.6	97		8	90.10	27.40
6169.0	0.0	3.2	100		12	90.07	27.40
6170.0	0.0	2.2	100		20	90.04	27.40
6171.0	0.0	0.4	100		34	90.02	27.40
6172.0	0.0	0.0	100		40	90.02	27.40
6173.0	0.0	0.0	100		34	90.02	27.40
6174.0	0.0	0.1	100		27	90.02	27.40
6175.0	0.0	3.1	100		20	90.01	27.40
6176.0	0.0	0.2	100		28	89.98	27.40
6177.0	0.0	0.0	100		33	89.98	27.40
6178.0	0.0	0.0	100		47	89.98	27.40
6180.0	0.0	0.0	100		42	89.98	27.40
6181.0	0.0	3.2	100		17	89.96	27.40
6182.0	0.0	1.5	100		35	89.94	27.40
6183.0	0.0	0.3	100		49	89.94	27.40
6184.0	0.0	0.1	100		47	89.93	27.40
6194.0	0.0	0.0	100		46	89.90	27.40
6195.0	0.0	0.1	100		38	89.90	27.40
6196.0	0.0	4.2	65		19	89.88	27.40
6197.0	2	9.7	41		6	89.83	27.38
6198.0	0.0	0.0	100		43	89.78	27.35
6203.0	0.0	0.0	0		0	0.00	0.00
6206.0	0.0	0.0	0		0	0.00	0.00
6207.0	0.0	3.1	100		45	89.75	27.35
6208.0	0.5	8.7	55		9	89.72	27.35
6209.0	0.0	1.1	100		15	89.68	27.32
6210.0	0.0	0.0	100		16	89.65	27.32
6211.0	0.0	0.6	100		23	89.64	27.32
6212.0	0.0	0.0	100		36	89.64	27.32
6213.0	0.0	0.0	100		42	89.64	27.32
6217.0	0.0	3.4	100		26	89.63	27.32
6218.0	0.0	2.7	100		23	89.60	27.32
6219.0	0.0	2.1	100		31	89.57	27.32
6220.0	0.0	0.5	100		30	89.55	27.32
6221.0	0.0	0.0	100		35	89.55	27.32
6222.0	0.0	0.3	100		37	89.55	27.32
6223.0	0.0	2.5	100		43	89.54	27.32
6224.0	0.0	2.1	100		46	89.52	27.32
6225.0	0.0	2.3	100		44	89.49	27.32
6229.0	0.0	3.0	100		49	89.43	27.32
6230.0	0.0	2.4	100		42	89.40	27.32
6231.0	0.0	0.0	100		43	89.39	27.32

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
6232.0	0.0	0.2	100		39	89.39	27.32
6233.0	0.0	2.3	100		30	89.39	27.32
6234.0	0.0	0.0	100		47	89.37	27.32
6236.0	0.0	5.8	68		17	89.37	27.32
6237.0	0.2	7.1	61		10	89.31	27.30
6238.0	0.2	7.5	66		13	89.24	27.27
6239.0	0.1	8.5	73		10	89.16	27.25
6240.0	0.1	8.8	74		10	89.08	27.22
6241.0	0.1	8.4	81		9	88.99	27.20
6242.0	0.1	8.4	73		11	88.90	27.19
6243.0	0.4	8.9	66		11	88.82	27.16
6244.0	0.2	9.1	70		6	88.73	27.13
6245.0	0.0	8.9	84		20	88.64	27.11
6246.0	0.0	6.3	100		22	88.57	27.10
6247.0	0.0	3.3	100		32	88.51	27.10
6248.0	0.0	3.3	100		31	88.48	27.10
6249.0	0.0	1.8	100		36	88.45	27.10
6250.0	0.0	2.5	100		38	88.44	27.10
6251.0	0.0	3.5	100		42	88.41	27.10
6252.0	0.0	4.1	100		43	88.37	27.10
6255.0	0.0	5.1	100		40	88.25	27.10
6256.0	0.0	5.4	98		39	88.20	27.10
6259.0	0.0	1.2	100		41	88.13	27.09
6260.0	0.0	2.6	100		34	88.11	27.09
6261.0	0.0	3.7	100		30	88.09	27.09
6262.0	0.0	4.1	97		25	88.05	27.09
6263.0	0.1	5.8	61		13	88.00	27.08
6264.0	0.9	10.4	66		4	87.94	27.06
6265.0	0.0	3.2	100		36	87.86	27.04
6266.0	0.0	0.0	0		0	0.00	0.00
6267.0	0.0	0.0	0		0	0.00	0.00
6268.0	0.0	2.6	100		49	87.84	27.04
6271.0	0.0	0.0	0		0	0.00	0.00
6272.0	0.0	3.1	100		45	87.76	27.04
6274.0	0.0	3.8	100		40	87.71	27.04
6276.0	0.0	0.0	0		0	0.00	0.00
6280.0	0.0	2.0	100		49	87.65	27.04
6281.0	0.0	3.7	100		28	87.62	27.04
6282.0	0.0	1.8	100		33	87.59	27.04
6283.0	0.0	0.0	100		47	87.58	27.04
6286.0	0.0	2.7	100		49	87.56	27.04

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
6287.0	0.0	2.5	100		42	87.53	27.04
6288.0	0.0	0.9	100		47	87.51	27.04
6296.0	0.0	2.8	100		44	87.39	27.04
6299.0	0.5	8.2	53		11	87.33	27.04
6300.0	5	14.1	55		0	87.23	26.99
6301.0	0.0	1.9	100		41	87.15	26.96
6302.0	0.0	0.0	0		0	0.00	0.00
6303.0	0.0	3.6	100		47	87.12	26.96
6304.0	0.0	3.4	100		41	87.08	26.96
6318.0	0.0	2.1	100		46	86.97	26.96
6319.0	0.0	2.5	104		39	86.95	26.96
6320.0	0.0	3.3	100		37	86.94	26.96
6321.0	0.0	2.3	100		45	86.90	26.96
6324.0	0.0	3.8	100		43	86.84	26.96
6325.0	0.0	2.4	100		33	86.80	26.96
6326.0	0.0	1.1	100		44	86.79	26.96
6327.0	0.0	2.3	100		45	86.77	26.96
6328.0	0.0	1.6	100		42	86.75	26.96
6337.0	0.0	0.0	100		50	86.74	26.96
6340.0	0.3	7.4	55		14	86.74	26.96
6341.0	0.0	0.0	100		35	86.70	26.94
6342.0	0.0	0.1	100		40	86.70	26.94
6343.0	0.0	0.0	100		49	86.70	26.94
6348.0	0.0	0.1	100		44	86.69	26.94
6349.0	0.0	0.4	100		43	86.69	26.94
6352.0	0.0	0.1	100		49	86.69	26.94
6353.0	0.0	0.5	100		49	86.69	26.94
6355.0	0.0	0.2	100		49	86.68	26.94
6365.0	0.0	0.0	100		47	86.67	26.94
6366.0	0.0	0.0	100		41	86.67	26.94
6368.0	0.0	0.0	0		0	0.00	0.00
6369.0	0.0	3.4	100		49	86.66	26.94
6370.0	0.0	4.4	68		39	86.63	26.94
6371.0	0.0	2.6	100		37	86.59	26.93
6372.0	0.0	3.4	100		26	86.56	26.93
6373.0	0.0	3.3	100		26	86.53	26.93
6374.0	0.0	2.1	100		31	86.50	26.93

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
6375.0	0.0	3.6	97		22	86.47	26.93
6376.0	0.0	3.8	65		16	86.43	26.92
6377.0	0.0	2.6	100		21	86.40	26.92
6378.0	0.0	2.0	100		27	86.38	26.92
6379.0	0.0	0.9	100		40	86.36	26.92
6387.0	0.0	0.0	100		39	86.34	26.92
6392.0	0.0	2.6	100		47	86.33	26.92
6394.0	0.0	0.0	0		0	0.00	0.00
6396.0	0.0	0.1	100		41	86.24	26.92
6399.0	0.0	4.0	100		38	86.22	26.92
6400.0	0.0	2.6	100		34	86.18	26.92
6401.0	0.0	0.1	100		32	86.17	26.92
6402.0	0.0	0.1	100		34	86.17	26.92
6403.0	0.0	1.2	100		32	86.17	26.92
6404.0	0.0	0.7	100		33	86.15	26.92
6405.0	0.0	0.1	100		31	86.15	26.92
6406.0	0.0	2.3	100		24	86.14	26.92
6407.0	0.0	2.4	100		27	86.12	26.92
6408.0	0.0	1.3	100		38	86.10	26.92
6409.0	0.0	0.6	100		35	86.09	26.92
6410.0	0.0	1.2	100		28	86.08	26.92
6411.0	0.0	0.0	100		37	86.07	26.92
6412.0	0.0	0.0	100		41	86.07	26.92
6413.0	0.0	0.5	100		50	86.07	26.92
6415.0	0.0	0.5	100		44	86.06	26.92
6421.0	0.0	0.0	0		0	0.00	0.00
6422.0	0.1	5.6	54		30	86.02	26.92
6423.0	0.0	4.7	54		9	85.96	26.89
6424.0	0.1	5.1	47		8	85.91	26.87
6425.0	0.1	5.1	54		23	85.86	26.84
6430.0	0.0	0.0	0		0	0.00	0.00
6431.0	0.0	0.0	0		0	0.00	0.00
6433.0	0.0	3.7	100		48	85.75	26.83
6434.0	0.0	2.6	100		45	85.72	26.83
6435.0	0.0	0.8	100		48	85.70	26.83
6436.0	0.0	2.0	100		43	85.68	26.83
6437.0	0.0	1.6	100		45	85.66	26.83
6446.0	0.0	0.0	0		0	0.00	0.00

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
6447.0	0.0	0.0	0		0	0.00	0.00
6448.0	0.0	3.7	100		33	85.59	26.83
6449.0	0.0	2.4	100		26	85.54	26.82
6453.0	0.0	2.3	100		46	85.50	26.82
6454.0	0.0	2.1	100		39	85.47	26.82
6455.0	0.0	0.9	100		39	85.45	26.82
6456.0	0.0	0.0	100		45	85.45	26.82
6463.0	0.0	3.5	100		48	85.43	26.82
6464.0	0.0	2.7	100		47	85.39	26.82
6466.0	0.0	0.3	100		43	85.36	26.82
6467.0	0.0	0.0	100		44	85.35	26.82
6468.0	0.0	0.3	100		44	85.35	26.82
6469.0	0.0	0.0	0		0	0.00	0.00
6470.0	0.0	3.3	100		43	85.35	26.82
6471.0	0.0	3.6	100		49	85.32	26.82
6473.0	0.0	0.0	0		0	0.00	0.00
6474.0	0.0	2.8	100		48	85.26	26.82
6475.0	0.0	2.6	100		44	85.23	26.82
6476.0	0.0	3.4	100		35	85.20	26.82
6477.0	0.0	2.6	100		34	85.17	26.82
6478.0	0.0	3.8	100		28	85.14	26.82
6479.0	0.0	4.6	69		21	85.10	26.82
6480.0	0.1	6.7	62		10	85.05	26.80
6481.0	0.2	7.0	64		9	84.98	26.77
6482.0	0.2	7.3	63		9	84.91	26.75
6483.0	0.4	8.0	58		8	84.83	26.72
6484.0	0.2	7.2	60		8	84.75	26.69
6485.0	0.2	7.0	61		12	84.68	26.66
6486.0	0.2	7.1	63		10	84.61	26.63
6487.0	0.2	7.5	61		11	84.54	26.60
6488.0	0.3	7.8	59		14	84.46	26.57
6489.0	0.6	8.9	58		7	84.38	26.54
6490.0	1	9.8	54		0	84.29	26.50
6491.0	2	10.7	49		0	84.19	26.45
6492.0	2	10.4	45		0	84.08	26.40
6493.0	1	9.2	44		4	83.98	26.34
6494.0	2	10.1	44	6.5	10	83.89	26.29
6495.0	0.2	7.2	57		20	83.79	26.24
6496.0	0.0	5.1	60		26	83.72	26.21
6497.0	0.1	6.4	60		15	83.67	26.19
6498.0	0.3	7.6	59		0	83.61	26.17
6499.0	0.5	8.3	53		0	83.53	26.14
6500.0	0.1	6.2	61		4	83.45	26.10
6501.0	0.0	3.9	93		7	83.40	26.08

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
6502.0	0.0	4.9	55		18	83.36	26.08
6503.0	0.0	2.9	100		27	83.31	26.06
6504.0	0.0	2.4	100		26	83.29	26.06
6505.0	0.0	4.1	93		24	83.25	26.06
6506.0	0.0	4.4	65		25	83.22	26.05
6507.0	0.0	4.6	58		23	83.17	26.04
6508.0	0.0	3.7	99		22	83.13	26.02
6509.0	0.0	4.2	62		22	83.09	26.02
6510.0	0.2	6.2	42		21	83.04	25.99
6511.0	0.0	3.5	100		35	82.99	25.98
6512.0	0.0	3.4	100		40	82.96	25.98
6513.0	0.0	0.0	0		0	0.00	0.00
6515.0	0.0	0.0	0		0	0.00	0.00
6518.0	0.1	5.5	53		35	82.84	25.97
6519.0	0.1	6.5	63		26	82.78	25.94
6520.0	0.1	6.0	65		32	82.72	25.92
6521.0	0.1	5.8	61		34	82.66	25.90
6522.0	0.1	6.2	65		29	82.60	25.87
6523.0	0.0	5.4	100		28	82.54	25.86
6524.0	0.0	5.4	78		39	82.48	25.86
6525.0	0.0	6.0	72		32	82.43	25.85
6526.0	0.0	5.6	79		30	82.37	25.83
6527.0	0.0	5.7	99		24	82.31	25.82
6528.0	0.0	6.0	100		20	82.25	25.82
6529.0	0.0	6.1	100		16	82.20	25.82
6530.0	0.5	10.7	76		9	82.13	25.82
6531.0	0.4	10.3	95		8	82.03	25.81
6532.0	1	11.6	85		6	81.92	25.80
6533.0	5	14.5	60		7	81.79	25.76
6534.0	2	12.5	61		6	81.66	25.71
6535.0	4	13.2	55		7	81.53	25.66
6536.0	0.1	9.0	75		10	81.41	25.61
6537.0	0.0	7.7	69		13	81.36	25.60
6538.0	0.0	5.2	100		29	81.29	25.59
6540.0	0.0	0.0	0		0	0.00	0.00
6541.0	0.0	2.9	100		45	81.23	25.59
6544.0	0.0	3.2	100		50	81.21	25.59
6545.0	0.0	3.2	100		35	81.17	25.59
6546.0	0.0	1.5	100		47	81.15	25.59
6561.0	0.0	1.7	100		44	81.11	25.59
6576.0	0.0	2.4	100		41	81.08	25.59
6582.0	0.0	4.5	100		31	81.04	25.59

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
6583.0	0.0	5.3	77		32	81.00	25.59
6584.0	0.0	4.5	92		36	80.95	25.57
6589.0	0.0	2.9	100		39	80.88	25.57
6590.0	0.0	3.9	100		30	80.85	25.57
6591.0	0.0	3.2	100		33	80.81	25.57
6592.0	0.0	2.5	100		42	80.78	25.57
6595.0	0.0	3.1	100		35	80.72	25.57
6596.0	0.0	2.5	100		39	80.69	25.57
6599.0	0.0	3.0	100		45	80.64	25.57
6600.0	0.0	3.6	100		37	80.61	25.57
6601.0	0.0	4.3	100		35	80.57	25.57
6602.0	0.0	5.2	67		34	80.52	25.57
6603.0	0.0	5.6	67		30	80.47	25.55
6604.0	0.0	4.7	81		34	80.42	25.53
6605.0	0.0	3.1	100		35	80.38	25.53
6606.0	0.0	1.6	100		41	80.35	25.53
6610.0	0.0	0.0	100		49	80.34	25.53
6630.0	0.0	3.4	100		47	80.32	25.53
6631.0	0.0	5.4	100		20	80.28	25.53
6632.0	0.0	6.4	88		23	80.22	25.53
6633.0	0.3	8.4	66		15	80.16	25.52
6634.0	0.7	9.5	59		4	80.06	25.48
6635.0	0.3	8.1	62		6	79.97	25.45
6636.0	0.2	7.5	62		10	79.89	25.42
6637.0	0.1	6.6	59		7	79.82	25.39
6638.0	0.1	5.1	50		6	79.76	25.36
6639.0	0.0	4.2	80		7	79.71	25.34
6640.0	0.1	6.0	62		4	79.67	25.32
6641.0	0.6	9.1	59		5	79.60	25.30
6642.0	1	10.2	54		3	79.50	25.26
6643.0	1	10.0	54		5	79.40	25.21
6644.0	1	10.2	54		5	79.30	25.16
6645.0	2	11.0	52		4	79.20	25.11
6646.0	4	12.7	46		1	79.09	25.06
6647.0	2	11.4	49	0.5	4	78.98	24.99
6648.0	2	11.1	50		6	78.85	24.93
6649.0	2	11.1	52		5	78.74	24.88
6650.0	2	11.5	49	0.5	7	78.63	24.83
6651.0	2	10.7	51	0.7	8	78.51	24.77
6652.0	2	10.9	49	0.5	9	78.40	24.71
6653.0	2	10.7	51	0.6	8	78.29	24.65
6654.0	1	10.0	54		8	78.19	24.60
6655.0	0.9	9.7	54		8	78.09	24.56

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
6656.0	0.1	6.5	58		18	78.00	24.52
6657.0	0.0	3.2	100		35	77.95	24.50
6658.0	0.0	2.0	100		43	77.92	24.50
6663.0	0.0	3.9	100		47	77.89	24.50
6664.0	0.0	6.2	80		23	77.85	24.49
6665.0	0.0	6.4	86		22	77.78	24.48
6666.0	0.0	6.9	76		19	77.72	24.47
6667.0	0.7	9.6	61		10	77.65	24.45
6668.0	0.5	8.7	57		16	77.58	24.41
6669.0	0.5	8.9	64		11	77.46	24.38
6670.0	4	12.8	50		4	77.37	24.34
6671.0	3	12.2	52	0.6	5	77.24	24.28
6672.0	2	11.6	56	0.6	5	77.12	24.22
6673.0	0.2	9.2	68		12	77.01	24.17
6674.0	0.0	5.7	74		30	76.92	24.15
6677.0	0.0	3.3	100		32	76.82	24.14
6686.0	0.0	3.1	100		41	76.79	24.14
6687.0	0.0	4.0	93		30	76.76	24.14
6688.0	0.1	5.3	87		12	76.71	24.13
6689.0	0.1	4.9	48		9	76.66	24.10
6690.0	0.0	4.5	88		7	76.61	24.08
6691.0	0.0	4.4	77		6	76.57	24.06
6692.0	0.0	5.9	73		6	76.52	24.05
6693.0	0.2	7.4	63		5	76.46	24.03
6694.0	0.2	7.2	61		8	76.39	24.01
6695.0	0.4	8.1	58		6	76.31	23.98
6696.0	1	10.4	51		0	76.22	23.94
6697.0	2	10.5	51	0.5	1	76.12	23.89
6698.0	2	10.9	48		0	76.01	23.83
6699.0	1	10.1	50	0.5	4	75.90	23.78
6700.0	0.8	9.3	54		8	75.81	23.73
6701.0	0.8	9.6	56		5	75.71	23.69
6702.0	2	10.6	51	0.5	0	75.61	23.64
6703.0	2	11.1	46	0.5	8	75.51	23.59
6704.0	2	11.0	50	0.5	4	75.40	23.53
6705.0	1	10.1	51		10	75.29	23.47
6706.0	0.8	9.2	52		13	75.19	23.43
6707.0	0.3	8.0	59		15	75.10	23.38
6708.0	0.2	7.7	64		16	75.02	23.35
6709.0	0.0	6.9	70		18	74.95	23.33
6710.0	0.1	6.2	68		24	74.88	23.31
6711.0	0.0	5.3	62		30	74.82	23.29
6712.0	0.0	5.3	63		31	74.77	23.27
6713.0	0.2	7.1	63		17	74.71	23.25
6714.0	0.1	7.0	66		17	74.64	23.22

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
6715.0	0.2	7.3	64		19	74.57	23.20
6716.0	0.0	5.6	75		27	74.51	23.17
6717.0	0.0	3.5	100		32	74.46	23.17
6718.0	0.0	0.3	100		47	74.43	23.17
6728.0	0.0	0.8	100		47	74.38	23.17
6732.0	0.1	5.1	80		26	74.35	23.17
6733.0	0.3	6.9	42		19	74.30	23.14
6734.0	0.6	7.5	39		15	74.23	23.10
6735.0	0.8	8.7	46		7	74.15	23.05
6736.0	0.6	8.9	56		1	74.06	23.00
6737.0	2	10.5	49		3	73.97	22.96
6738.0	7	12.0	37	0.1	7	73.86	22.90
6739.0	9	13.6	39	0.1	8	73.73	22.82
6740.0	5	12.8	43	0.1	10	73.60	22.74
6741.0	8	13.5	39	0.2	10	73.47	22.67
6742.0	8	12.9	36	0.2	10	73.33	22.58
6743.0	7	12.3	35	0.2	8	73.20	22.50
6744.0	5	11.1	32	0.2	10	73.08	22.42
6745.0	6	11.1	30	0.3	9	72.97	22.34
6746.0	6	11.2	29	0.3	8	72.86	22.26
6747.0	7	11.2	28	0.1	12	72.75	22.18
6748.0	5	10.9	31	0.1	11	72.64	22.10
6749.0	5	12.0	36		17	72.53	22.03
6750.0	0.0	2.2	100		33	72.40	21.96
6760.0	0.0	0.2	100		47	72.37	21.96
6765.0	0.0	2.4	100		43	72.37	21.96
6768.0	0.1	5.1	44		37	72.32	21.96
6769.0	2	10.3	39		9	72.26	21.93
6770.0	5	11.4	33	0.3	14	72.15	21.86
6771.0	3	10.4	39	0.5	8	72.04	21.79
6772.0	0.7	8.5	47		9	71.94	21.73
6773.0	0.0	2.4	100		35	71.86	21.69
6777.0	0.0	4.2	98		32	71.83	21.69
6778.0	1	9.6	46		9	71.76	21.67
6779.0	2	10.9	44		0	71.67	21.62
6780.0	4	11.2	37	0.3	7	71.56	21.56
6781.0	1	9.6	46		4	71.45	21.49
6782.0	1	9.3	46		6	71.36	21.44
6783.0	0.5	7.9	49		11	71.27	21.39
6784.0	0.5	7.8	46		11	71.19	21.35
6785.0	0.4	7.1	43		10	71.11	21.31
6786.0	0.3	6.2	38		8	71.04	21.27

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
6787.0	0.1	5.4	50		9	70.98	21.23
6788.0	0.1	6.0	61		10	70.93	21.21
6789.0	0.3	7.5	55		9	70.87	21.18
6790.0	0.3	7.4	56		8	70.79	21.15
6791.0	0.1	6.7	59		8	70.72	21.12
6792.0	0.3	7.4	56		5	70.65	21.09
6793.0	0.3	7.7	54		5	70.58	21.06
6794.0	0.6	8.6	51		4	70.50	21.02
6795.0	1	9.8	47	0.5	3	70.41	20.98
6796.0	2	10.0	43	0.5	9	70.31	20.92
6797.0	0.3	8.0	63		12	70.21	20.87
6800.0	0.0	2.9	100		47	70.16	20.86
6810.0	0.0	1.1	100		48	70.11	20.86
6832.0	0.0	4.4	100		32	70.04	20.86
6833.0	0.0	2.5	100		44	70.00	20.86
6836.0	0.0	3.7	100		43	69.97	20.86
6837.0	0.0	4.0	100		32	69.93	20.86
6838.0	0.0	4.2	100		33	69.89	20.86
6839.0	0.0	4.2	100		33	69.85	20.86
6840.0	0.0	4.7	100		35	69.81	20.86
6841.0	0.0	4.0	100		44	69.76	20.86
6848.0	0.0	1.7	100		45	69.71	20.86
6860.0	0.0	3.2	100		39	69.65	20.86
6861.0	0.0	4.0	90		31	69.62	20.86
6862.0	0.0	4.9	67		27	69.57	20.84
6863.0	0.0	1.0	100		48	69.53	20.84
6877.0	0.0	1.7	100		49	69.47	20.84
6885.0	0.0	1.1	100		47	69.46	20.84
6887.0	0.0	2.7	100		43	69.44	20.84
6888.0	0.0	3.3	100		43	69.41	20.84
6889.0	0.0	2.6	100		46	69.38	20.84
6912.0	0.0	3.5	100		30	69.33	20.84
6919.0	0.0	2.5	100		43	69.28	20.84
6920.0	0.0	3.4	100		37	69.25	20.84
6921.0	0.0	2.9	100		40	69.22	20.84
6923.0	0.0	1.8	100		43	69.17	20.84

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
6930.0	0.0	2.0	100		45	69.19	20.84
6931.0	0.0	3.2	100		32	69.13	20.84
6932.0	0.0	3.4	98		25	69.09	20.83
6933.0	0.0	1.7	100		25	69.06	20.83
6934.0	0.0	3.1	100		27	69.04	20.83
6935.0	0.2	7.2	66		17	69.00	20.82
6936.0	1	10.2	58		5	68.92	20.79
6937.0	0.7	9.5	61		5	68.82	20.75
6938.0	0.4	8.8	65		10	68.73	20.71
6939.0	0.0	7.7	68		18	68.64	20.68
6940.0	0.3	8.2	66		15	68.56	20.66
6941.0	0.4	8.6	64		14	68.48	20.63
6942.0	0.3	8.3	63		15	68.40	20.60
6943.0	1	10.4	56		8	68.32	20.57
6944.0	0.6	9.0	58		13	68.22	20.53
6945.0	0.8	9.5	55		10	68.13	20.49
6946.0	0.1	6.4	66		23	68.04	20.45
6947.0	0.0	5.0	61		29	67.98	20.42
6948.0	0.0	4.8	58		35	67.93	20.40
6949.0	0.0	5.0	63		29	67.88	20.38
6950.0	0.6	8.9	59		12	67.83	20.37
6951.0	2	11.1	54	0.7	5	67.73	20.32
6952.0	1	10.4	58		7	67.61	20.27
6953.0	0.0	7.7	67		15	67.52	20.23
6954.0	0.4	8.4	62		15	67.44	20.20
6955.0	0.5	8.7	60		12	67.36	20.17
6956.0	2	10.9	53	0.6	6	67.26	20.13
6957.0	2	11.0	54	0.5	5	67.15	20.08
6958.0	1	10.3	57		9	67.04	20.03
6959.0	0.6	9.1	60		12	66.94	19.98
6960.0	0.6	9.3	61		11	66.85	19.95
6961.0	0.3	8.1	63		15	66.76	19.92
6962.0	0.1	6.5	63		22	66.69	19.89
6963.0	0.1	6.3	65		21	66.62	19.87
6964.0	0.0	5.2	58		21	66.56	19.84
6965.0	0.2	6.3	45		11	66.51	19.82
6966.0	0.0	4.8	50		27	66.44	19.78
6967.0	0.0	0.7	100		48	66.40	19.77
6990.0	0.0	0.0	100		48	66.37	19.77
6991.0	0.0	0.0	100		47	66.37	19.77
6998.0	0.0	2.8	100		48	66.34	19.77
7000.0	0.0	1.9	100		46	66.32	19.77

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ISS -   2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22
        0  0  0  1  0  1  1  0  2  0  0  0  0  0  0  0  1  0  0  0  0

INPUT PARAMETERS FROM  9115. TO  7000.

 WMUD XLIT BITSZ  BHT BHTDEP SUFT   RMF RMFT ROMFS PHIMFS DASIL
 9.8 0.50  7.88 100.  9120.  60.  0.05  65. 1.174  0.898 0.600

 SPCK  DSPCK SODC DELRGN START STOPLG ZSPNL  BGN ZSPDL   REC  RESH CSS
   0.     0. 2.84  0.20  9115.  4000. 0.000 1.00 0.000 13.00 22.30 1.0

 WHY PHILEV  BR SLIM    AK   PK  SK STOPIN PHIMAX PHINCL PHIDCL
.200  0.000 .10 0.30 62500. 6.0 2.0  7000.  0.110  0.320  0.016

PHINSQ  RTPM  PUN  DAX DALIM DAGA DASH DTSD DTSH  CP  PSSH
 0.110  132. .015  92.   42.  20. 123. 150. 150. 1.00 .230

 EDIAM  PNLIM  PDLIM   RLIM  GRLIN VARMC  CONST  ROP VARLIM   CSF
  0.00   0.24   0.20   12.0   95.0  0.07  0.333  0.70  0.20  0.10

RES. START    100.     0.     0.     0.     0.     0.     0.
       STOP    50.     0.     0.     0.     0.     0.     0.

GAMMA - RAY STATISTICS OVER ENTIRE INTERVAL

SONIC STATISTICS OVER ENTIRE INTERVAL

ANALYSIS BY QUASI MODEL
PERMEABILITY BY TIMUR EQUATION
SP NOT USED IN SHALINESS DETERMINATION
GR COEFF. FROM STATISTICS
SONIC COEFF. FROM STATISTICS
WASANP ROUTINE USED
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DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
7001.0	0.0	1.0	100		40	66.30	19.77
7002.0	0.0	3.4	100		24	66.28	19.77
7003.0	0.0	0.0	100		43	66.25	19.77
7020.0	0.0	0.9	100		47	66.21	19.77
7025.0	0.0	4.3	96		29	66.17	19.77
7026.0	0.0	4.2	97		31	66.12	19.76
7027.0	0.0	4.4	82		32	66.08	19.76
7028.0	0.0	2.3	100		42	66.04	19.75
7031.0	0.0	5.4	75		34	65.99	19.75
7032.0	0.0	6.9	75		16	65.94	19.74
7033.0	0.1	7.8	70		11	65.86	19.72
7034.0	0.0	5.1	91		19	65.77	19.69
7035.0	0.0	0.2	100		44	65.74	19.69
7039.0	0.0	4.4	100		26	65.71	19.69
7040.0	0.8	9.9	63		11	65.65	19.68
7041.0	1	10.9	57		8	65.55	19.64
7042.0	0.8	9.7	58		12	65.45	19.60
7043.0	0.6	9.2	60		10	65.35	19.56
7044.0	0.7	9.3	57		10	65.26	19.52
7045.0	2	11.2	50		5	65.16	19.48
7046.0	3	11.8	47	0.3	4	65.04	19.42
7047.0	2	11.2	51	0.5	1	64.93	19.36
7048.0	0.2	7.2	61		10	64.82	19.31
7049.0	0.2	7.0	60		7	64.75	19.28
7050.0	0.4	8.3	58		4	64.68	19.25
7051.0	1	10.4	55		0	64.59	19.22
7052.0	1	10.2	58		1	64.49	19.17
7053.0	0.4	8.4	61		8	64.39	19.13
7054.0	0.4	8.0	58		11	64.31	19.10
7055.0	0.5	8.6	58		9	64.22	19.06
7056.0	0.5	9.0	62		8	64.14	19.02
7057.0	1	10.8	58	0.8**	1	64.04	18.98
7058.0	3	11.7	51		0	63.93	18.94
7059.0	2	10.4	47	0.5	6	63.81	18.88
7060.0	0.8	9.4	53		6	63.72	18.83
7061.0	0.0	0.7	100		39	63.65	18.80
7078.0	0.0	0.3	100		49	63.62	18.80
7079.0	0.0	1.2	100		42	63.61	18.80
7098.0	0.0	2.7	100		42	63.57	18.80
7099.0	0.0	3.6	100		33	63.54	18.80
7100.0	0.0	4.6	82		26	63.50	18.80
7101.0	0.0	5.7	97		18	63.45	18.80

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
7102.0	0.0	0.1	100		42	63.42	18.80
7103.0	0.0	0.0	100		45	63.42	18.80
7107.0	0.0	2.4	100		48	63.41	18.80
7111.0	0.0	5.3	66		20	63.34	18.79
7112.0	0.0	6.3	69		15	63.28	18.77
7113.0	0.2	7.4	62		11	63.22	18.75
7114.0	0.7	9.2	55		5	63.14	18.72
7115.0	0.0	6.6	68		15	63.08	18.68
7116.0	0.0	1.5	100		38	62.99	18.66
7122.0	0.0	2.3	100		43	62.97	18.66
7123.0	0.0	1.7	100		42	62.95	18.66
7124.0	0.0	1.3	100		44	62.93	18.66
7130.0	0.0	0.0	100		49	62.92	18.66
7148.0	0.0	0.4	100		40	62.89	18.66
7154.0	0.0	0.0	100		50	62.89	18.66
7180.0	0.0	1.8	100		47	62.82	18.66
7187.0	0.0	4.0	64		38	62.73	18.65
7188.0	0.0	2.5	100		41	62.69	18.64
7222.0	0.0	3.6	100		35	62.59	18.64
7223.0	0.0	4.3	73		30	62.55	18.64
7224.0	0.0	3.0	100		37	62.51	18.64
7232.0	0.0	2.9	100		50	62.47	18.64
7233.0	0.0	3.6	100		40	62.44	18.64
7234.0	0.0	3.8	100		33	62.40	18.64
7235.0	0.0	3.8	100		31	62.36	18.64
7236.0	0.1	5.5	81		19	62.33	18.64
7237.0	0.0	0.3	100		48	62.29	18.63
7243.0	0.0	3.6	100		41	62.27	18.63
7244.0	0.0	4.2	97		39	62.23	18.63
7245.0	0.0	5.3	85		20	62.19	18.62
7246.0	0.0	0.3	100		43	62.14	18.61
7247.0	0.0	2.2	100		47	62.14	18.61
7248.0	0.0	1.9	100		43	62.11	18.61
7250.0	0.0	3.1	100		47	62.06	18.61
7251.0	0.0	3.1	100		38	62.03	18.61
7252.0	0.0	2.1	100		37	62.00	18.61

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
7253.0	0.0	3.5	100		38	61.98	18.61
7254.0	0.0	4.2	100		37	61.94	18.61
7255.0	0.0	4.6	100		34	61.90	18.61
7256.0	0.0	4.5	100		34	61.85	18.61
7257.0	0.0	4.6	100		29	61.81	18.61
7258.0	0.0	4.1	100		30	61.76	18.61
7259.0	0.0	3.3	100		29	61.72	18.61
7260.0	0.0	3.6	100		28	61.69	18.61
7261.0	0.0	3.1	100		29	61.65	18.61
7262.0	0.0	3.2	100		31	61.62	18.61
7263.0	0.0	3.0	100		32	61.59	18.61
7264.0	0.2	5.5	32		16	61.55	18.60
7265.0	0.0	4.1	100		10	61.50	18.57
7266.0	0.0	5.3	100		10	61.46	18.57
7267.0	0.0	3.5	100		25	61.40	18.57
7268.0	0.0	3.4	100		29	61.37	18.57
7269.0	0.0	4.0	100		28	61.33	18.57
7270.0	0.0	3.8	100		29	61.29	18.57
7271.0	0.0	3.9	100		29	61.25	18.57
7272.0	0.0	3.6	100		31	61.21	18.57
7273.0	0.0	3.5	100		29	61.18	18.57
7274.0	0.0	3.4	100		29	61.14	18.57
7275.0	0.0	4.5	100		25	61.11	18.57
7276.0	0.0	7.0	94		14	61.06	18.57
7277.0	0.0	3.6	100		28	61.00	18.57
7278.0	0.0	2.8	100		34	60.97	18.57
7279.0	0.0	2.5	100		47	60.94	18.57
7280.0	0.0	2.2	100		47	60.92	18.57
7285.0	0.0	3.9	100		33	60.87	18.57
7286.0	0.0	4.7	87		26	60.83	18.57
7287.0	0.0	5.6	85		19	60.78	18.56
7288.0	0.0	6.6	80		15	60.72	18.55
7289.0	0.0	5.9	94		18	60.66	18.54
7290.0	0.0	5.2	98		21	60.60	18.54
7291.0	0.0	5.8	89		20	60.55	18.54
7292.0	0.0	6.5	83		13	60.49	18.53
7293.0	0.0	5.8	71		18	60.42	18.51
7294.0	0.0	4.5	74		17	60.37	18.50
7295.0	0.0	3.7	100		15	60.33	18.49
7296.0	0.0	4.0	99		15	60.29	18.49
7297.0	0.0	4.1	100		16	60.25	18.49
7298.0	0.0	5.1	80		14	60.20	18.49
7299.0	0.0	7.1	60		6	60.15	18.48
7300.0	0.1	7.9	69		6	60.07	18.45
7301.0	0.2	7.9	66		9	60.00	18.43
7302.0	0.3	8.1	63		9	59.92	18.40
7303.0	0.6	8.9	58		5	59.83	18.37

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
7304.0	0.1	8.7	76		8	59.75	18.33
7308.0	0.0	0.2	100		43	59.68	18.32
7312.0	0.0	0.0	100		42	59.68	18.32
7313.0	0.0	0.0	100		43	59.68	18.32
7316.0	0.0	0.0	100		49	59.68	18.32
7340.0	0.0	0.5	100		50	59.66	18.32
7350.0	0.0	2.4	100		44	59.65	18.32
7351.0	0.0	4.0	98		43	59.62	18.32
7352.0	0.0	5.2	68		26	59.58	18.31
7353.0	0.1	6.3	64		20	59.52	18.30
7354.0	0.0	5.5	70		23	59.46	18.27
7355.0	0.0	2.4	100		39	59.42	18.27
7374.0	0.0	1.7	100		46	59.39	18.27
7375.0	0.0	2.3	100		34	59.37	18.27
7376.0	0.0	2.5	100		35	59.35	18.27
7377.0	0.0	3.6	100		39	59.32	18.27
7378.0	0.0	4.0	100		38	59.28	18.27
7379.0	0.0	3.5	100		41	59.24	18.27
7380.0	0.0	2.2	100		45	59.21	18.27
7387.0	0.0	4.7	100		36	59.16	18.27
7388.0	0.0	4.5	100		38	59.11	18.27
7389.0	0.0	3.3	100		45	59.07	18.27
7390.0	0.0	4.1	100		42	59.04	18.27
7391.0	0.0	5.5	99		27	58.99	18.27
7392.0	0.0	5.6	94		26	58.94	18.27
7393.0	0.0	5.9	90		21	58.88	18.26
7394.0	0.0	5.5	95		20	58.83	18.26
7395.0	0.0	6.2	75		23	58.77	18.25
7396.0	0.0	5.6	83		26	58.71	18.23
7397.0	0.0	6.0	93		22	58.65	18.23
7398.0	0.0	4.0	100		27	58.59	18.22
7399.0	0.0	2.0	100		38	58.55	18.22
7402.0	0.0	1.8	100		48	58.52	18.22
7420.0	0.0	3.3	100		34	58.49	18.22
7421.0	0.0	0.0	100		42	58.46	18.22
7422.0	0.0	0.0	100		41	58.46	18.22
7423.0	0.0	2.5	100		28	58.46	18.22
7424.0	0.0	3.9	87		13	58.43	18.22
7425.0	0.0	3.8	100		19	58.39	18.22
7426.0	0.0	4.1	98		29	58.35	18.22

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
7427.0	0.0	5.3	69		22	58.31	18.21
7428.0	0.0	6.7	70		14	58.25	18.19
7429.0	0.1	6.7	59		17	58.20	18.17
7430.0	0.2	7.4	58		11	58.13	18.14
7431.0	1	9.8	52		3	58.05	18.11
7432.0	1	10.3	50	0.5	3	57.95	18.06
7433.0	0.9	9.4	53		0	57.85	18.01
7434.0	0.5	8.4	56		0	57.76	17.97
7435.0	0.4	8.3	57		1	57.67	17.93
7436.0	1	9.6	51		0	57.59	17.89
7437.0	1	9.8	50		0	57.49	17.85
7438.0	1	9.7	52		0	57.39	17.80
7439.0	1	9.8	51		0	57.29	17.75
7440.0	0.8	9.1	50		0	57.20	17.70
7441.0	0.4	8.1	54		0	57.11	17.66
7442.0	0.5	8.5	56		0	57.03	17.63
7443.0	0.6	8.7	53		0	56.94	17.59
7444.0	0.6	8.7	52		0	56.86	17.55
7445.0	0.6	8.6	52		0	56.77	17.50
7446.0	0.6	8.8	56		0	56.68	17.46
7447.0	0.3	8.1	64		5	56.60	17.43
7448.0	1	10.2	53	0.5	1	56.51	17.39
7449.0	0.9	9.4	51		0	56.41	17.34
7450.0	0.7	9.0	53		0	56.32	17.30
7451.0	0.9	9.6	55		0	56.23	17.26
7452.0	0.0	5.3	74		23	56.13	17.21
7453.0	0.0	3.7	100		32	56.08	17.21
7454.0	0.0	1.6	100		36	56.05	17.21
7455.0	0.0	0.2	100		47	56.04	17.21
7477.0	0.0	1.5	100		43	56.03	17.21
7478.0	0.0	2.8	100		34	56.01	17.21
7479.0	0.0	2.5	100		36	55.98	17.21
7482.0	0.0	3.2	100		38	55.94	17.21
7483.0	0.0	4.6	100		29	55.90	17.21
7484.0	0.0	5.2	85		23	55.85	17.20
7485.0	0.0	5.0	92		18	55.80	17.20
7486.0	0.0	5.1	91		17	55.75	17.19
7487.0	0.0	5.0	97		16	55.70	17.19
7488.0	0.0	6.2	86		12	55.65	17.19
7489.0	0.0	2.8	100		26	55.59	17.18
7490.0	0.0	0.2	100		27	55.58	17.18
7491.0	0.0	3.6	100		17	55.57	17.18
7492.0	0.0	5.6	91		20	55.52	17.18
7493.0	0.0	3.7	100		33	55.47	17.17
7494.0	0.0	4.4	100		29	55.44	17.17
7495.0	0.0	4.5	100		27	55.39	17.17

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
7496.0	0.0	3.6	100		27	55.35	17.17
7497.0	0.0	2.5	100		29	55.31	17.17
7498.0	0.0	0.9	100		43	55.28	17.17
7518.0	0.0	2.6	100		43	55.26	17.17
7519.0	0.0	2.9	100		38	55.23	17.17
7520.0	0.0	4.6	95		19	55.20	17.17
7521.0	0.0	4.4	100		17	55.15	17.17
7522.0	0.0	3.8	100		19	55.11	17.17
7523.0	0.0	3.4	100		23	55.07	17.17
7524.0	0.0	5.3	67		21	55.04	17.17
7525.0	0.0	4.4	89		17	54.99	17.16
7526.0	0.0	6.5	74		10	54.94	17.15
7527.0	0.4	8.6	62		5	54.87	17.13
7528.0	0.8	9.7	58		0	54.78	17.09
7529.0	0.6	9.8	59		2	54.68	17.05
7530.0	1	10.1	54	0.6	2	54.58	17.01
7531.0	2	11.1	47	0.5	5	54.48	16.96
7532.0	2	10.6	50	0.5	6	54.38	16.91
7533.0	0.1	8.0	66		21	54.29	16.87
7534.0	1	10.2	55	0.7	1	54.20	16.83
7535.0	1	10.2	55		0	54.10	16.79
7536.0	1	10.8	57		0	54.00	16.74
7537.0	1	10.9	58		0	53.89	16.70
7538.0	0.9	10.0	61		2	53.78	16.65
7539.0	0.7	9.7	63		4	53.69	16.61
7540.0	1	10.2	59		4	53.59	16.58
7541.0	0.0	4.5	90		25	53.50	16.54
7542.0	0.0	4.3	100		30	53.46	16.54
7543.0	0.0	5.1	69		34	53.41	16.54
7544.0	0.0	5.4	75		27	53.36	16.52
7545.0	0.0	7.3	72		14	53.30	16.51
7546.0	0.0	5.3	95		19	53.24	16.49
7547.0	0.0	0.0	100		47	53.21	16.49
7551.0	0.0	1.1	100		44	53.20	16.49
7552.0	0.0	1.2	100		45	53.19	16.49
7553.0	0.0	1.9	100		41	53.18	16.49
7554.0	0.0	3.0	100		31	53.16	16.49
7555.0	0.0	2.7	100		31	53.13	16.49
7556.0	0.0	2.1	100		38	53.10	16.49
7558.0	0.0	2.4	100		49	53.08	16.49
7559.0	0.0	2.9	100		34	53.06	16.49
7560.0	0.0	2.5	100		33	53.03	16.49
7561.0	0.0	0.6	100		44	53.00	16.49
7562.0	0.0	3.0	100		30	52.99	16.49
7563.0	0.0	2.7	100		33	52.96	16.49

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
7564.0	0.0	2.3	100		40	52.93	16.49
7565.0	0.0	4.4	100		38	52.91	16.49
7566.0	0.0	4.4	100		31	52.87	16.49
7567.0	0.0	4.3	100		30	52.83	16.49
7568.0	0.0	5.0	71		29	52.78	16.49
7569.0	0.2	7.5	84		9	52.73	16.47
7570.0	0.2	7.3	66		13	52.65	16.44
7571.0	0.0	6.1	67		21	52.58	16.42
7572.0	0.0	5.2	70		26	52.53	16.40
7573.0	0.0	4.8	81		29	52.47	16.39
7574.0	0.0	4.0	100		32	52.43	16.38
7575.0	0.0	4.9	78		30	52.39	16.38
7576.0	0.0	5.1	97		24	52.34	16.37
7577.0	0.0	5.8	99		24	52.28	16.37
7578.0	0.0	5.2	100		29	52.23	16.37
7579.0	0.0	4.6	99		38	52.18	16.37
7580.0	0.0	3.1	100		39	52.13	16.37
7587.0	0.0	0.0	100		42	52.10	16.37
7588.0	0.0	0.5	100		39	52.10	16.37
7589.0	0.0	2.5	100		31	52.09	16.37
7590.0	0.0	2.0	100		29	52.07	16.37
7591.0	0.0	2.9	100		30	52.04	16.37
7592.0	0.0	0.0	100		40	52.03	16.37
7593.0	0.0	0.0	100		30	52.03	16.37
7594.0	0.0	0.0	100		24	52.03	16.37
7595.0	0.0	2.1	100		19	52.02	16.37
7596.0	0.0	3.3	100		21	52.00	16.37
7597.0	0.0	2.8	100		16	51.96	16.37
7598.0	0.0	1.9	100		18	51.94	16.37
7599.0	0.0	0.1	100		28	51.94	16.37
7600.0	0.0	3.2	100		23	51.93	16.37
7601.0	0.0	4.8	71		18	51.89	16.37
7602.0	0.1	6.1	84		6	51.84	16.35
7603.0	0.0	5.8	67		7	51.78	16.33
7604.0	0.2	7.2	65		2	51.72	16.31
7605.0	0.5	8.7	57		0	51.65	16.28
7606.0	0.6	9.0	55		0	51.56	16.24
7607.0	0.3	7.9	60		0	51.47	16.20
7608.0	0.2	7.4	58		7	51.39	16.17
7609.0	0.0	5.0	70		21	51.32	16.14
7610.0	0.0	1.1	100		50	51.29	16.13
7612.0	0.0	2.0	100		43	51.26	16.13
7613.0	0.0	2.7	100		47	51.23	16.13
7614.0	0.0	2.4	100		45	51.21	16.13
7615.0	0.0	2.7	100		39	51.18	16.13
7616.0	0.0	1.3	100		49	51.16	16.13

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
7626.0	0.0	2.0	100		49	51.09	16.13
7627.0	0.0	3.5	100		41	51.06	16.13
7628.0	0.0	4.6	100		36	51.02	16.13
7629.0	0.0	5.3	87		25	50.98	16.13
7630.0	0.1	7.8	71		9	50.92	16.12
7631.0	0.1	7.8	69		8	50.84	16.10
7632.0	0.3	7.9	66		9	50.76	16.07
7633.0	0.3	8.0	64		11	50.68	16.05
7634.0	0.0	6.6	68		15	50.60	16.02
7635.0	0.0	3.4	100		35	50.55	16.01
7636.0	0.0	4.2	88		32	50.51	16.01
7637.0	0.0	4.9	71		15	50.47	16.00
7638.0	0.1	5.6	60		10	50.42	15.98
7639.0	0.0	4.2	80		24	50.36	15.96
7640.0	0.0	5.0	73		25	50.32	15.96
7641.0	0.0	4.1	100		40	50.28	15.95
7642.0	0.0	3.4	100		45	50.24	15.95
7643.0	0.0	4.2	100		41	50.20	15.95
7644.0	0.0	3.7	100		41	50.16	15.95
7645.0	0.0	4.1	100		37	50.12	15.95
7646.0	0.0	3.2	100		44	50.08	15.95
7678.0	0.0	3.3	100		38	50.03	15.95
7679.0	0.0	4.2	98		39	50.00	15.95
7680.0	0.0	3.3	100		44	49.96	15.95
7681.0	0.0	1.0	100		47	49.93	15.95
7682.0	0.0	2.8	100		33	49.92	15.95
7683.0	0.0	3.7	100		25	49.89	15.95
7684.0	0.0	4.2	100		24	49.85	15.95
7685.0	0.0	4.5	92		16	49.81	15.95
7686.0	0.0	6.0	76		11	49.75	15.94
7687.0	0.0	5.3	85		15	49.70	15.93
7688.0	0.2	7.6	66		8	49.64	15.91
7689.0	0.0	5.1	78		19	49.56	15.88
7707.0	0.0	0.8	100		49	49.50	15.88
7708.0	0.0	0.5	100		49	49.49	15.88
7709.0	0.0	0.3	100		47	49.49	15.88
7713.0	0.0	2.5	100		45	49.43	15.88
7714.0	0.0	3.0	100		43	49.41	15.88
7715.0	0.0	3.7	94		47	49.37	15.88
7716.0	0.0	0.0	0		0	0.00	0.00
7717.0	0.0	2.9	100		29	49.32	15.88
7718.0	0.0	7.0	71		16	49.27	15.87
7719.0	0.2	7.0	61		11	49.19	15.84
7720.0	0.1	6.2	61		9	49.12	15.81

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
7721.0	0.1	6.0	60		7	49.06	15.79
7722.0	0.2	6.8	54		5	49.00	15.76
7723.0	0.2	6.9	52		5	48.93	15.73
7724.0	0.2	7.2	54		4	48.86	15.70
7725.0	1	9.5	50		1	48.79	15.66
7726.0	1	10.1	51		0	48.69	15.61
7727.0	1	9.8	49		0	48.59	15.56
7728.0	0.8	9.0	52		0	48.49	15.51
7729.0	0.6	8.6	53		3	48.40	15.47
7730.0	0.8	9.0	51		3	48.31	15.43
7731.0	0.6	8.8	53		2	48.22	15.38
7732.0	0.7	9.1	54		3	48.13	15.34
7733.0	1	10.1	49	0.5	2	48.04	15.30
7734.0	2	10.3	48	0.5	1	47.94	15.25
7735.0	0.3	7.7	55		12	47.84	15.20
7736.0	0.0	5.1	58		27	47.77	15.17
7737.0	0.1	5.8	53		24	47.72	15.14
7738.0	0.1	6.2	57		20	47.66	15.12
7739.0	0.0	5.3	62		24	47.60	15.09
7740.0	0.0	4.9	61		28	47.55	15.08
7741.0	0.1	5.5	59		20	47.50	15.06
7742.0	0.2	6.9	58		6	47.44	15.03
7743.0	0.2	7.2	58		6	47.37	15.00
7744.0	0.2	7.0	58		11	47.30	14.97
7745.0	0.1	6.0	60		15	47.23	14.95
7746.0	0.0	5.1	61		16	47.17	14.92
7747.0	0.0	5.1	60		16	47.12	14.90
7748.0	0.1	5.6	61		12	47.07	14.88
7749.0	0.0	4.9	65		23	47.02	14.86
7750.0	0.0	4.0	99		32	46.97	14.85
7751.0	0.0	4.5	70		28	46.93	14.85
7752.0	0.1	6.3	59		18	46.88	14.83
7753.0	0.1	6.2	55		17	46.82	14.80
7754.0	0.2	6.8	53		10	46.76	14.77
7755.0	0.3	7.1	49		12	46.69	14.74
7756.0	0.5	8.1	48		11	46.61	14.70
7757.0	1	10.1	51	0.5	2	46.53	14.66
7758.0	2	10.5	49	0.5	7	46.42	14.61
7759.0	0.3	8.1	60		10	46.33	14.56
7760.0	0.0	3.2	100		31	46.26	14.54
7761.0	0.0	3.2	100		35	46.23	14.54
7762.0	0.0	1.9	100		40	46.20	14.54
7780.0	0.0	2.8	100		47	46.15	14.54
7781.0	0.0	1.2	100		39	46.13	14.54
7782.0	0.0	1.2	100		43	46.12	14.54
7783.0	0.0	3.1	100		43	46.10	14.54
7784.0	0.0	3.2	100		38	46.07	14.54

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
7785.0	0.0	0.7	100		31	46.04	14.54
7786.0	0.0	1.9	100		26	46.04	14.54
7787.0	0.0	5.1	69		24	46.01	14.54
7788.0	0.0	5.2	60		27	45.96	14.52
7789.0	0.1	5.7	63		23	45.90	14.50
7790.0	0.2	6.9	60		15	45.85	14.48
7791.0	0.3	7.6	58		11	45.77	14.45
7792.0	0.1	6.6	60		14	45.70	14.42
7793.0	0.0	3.3	100		32	45.64	14.40
7811.0	0.0	0.8	100		38	45.52	14.40
7812.0	0.0	3.3	100		38	45.50	14.40
7813.0	0.0	3.8	100		31	45.47	14.40
7814.0	0.0	3.8	100		29	45.42	14.40
7815.0	0.0	2.7	100		31	45.39	14.40
7816.0	0.0	2.2	100		43	45.37	14.40
7817.0	0.0	2.0	100		44	45.35	14.40
7818.0	0.0	3.3	100		41	45.32	14.40
7819.0	0.0	2.2	100		35	45.29	14.40
7820.0	0.0	1.3	100		42	45.27	14.40
7821.0	0.0	2.3	100		43	45.25	14.40
7827.0	0.0	3.1	100		46	45.22	14.40
7828.0	0.0	3.9	100		35	45.18	14.40
7829.0	0.0	4.0	100		33	45.14	14.40
7830.0	0.0	4.7	73		27	45.11	14.40
7831.0	0.0	3.5	100		33	45.06	14.38
7832.0	0.0	1.5	100		46	45.03	14.38
7833.0	0.0	4.5	93		15	45.02	14.38
7834.0	0.1	6.2	56		8	44.97	14.38
7835.0	0.7	8.6	47		9	44.90	14.34
7836.0	0.0	3.7	100		30	44.82	14.30
7837.0	0.0	5.6	70		21	44.78	14.30
7838.0	0.0	4.4	84		16	44.73	14.29
7839.0	0.1	5.6	64		14	44.69	14.28
7840.0	0.2	6.7	48		19	44.63	14.26
7841.0	0.1	5.1	46		37	44.57	14.22
7842.0	0.1	5.1	53		35	44.52	14.20
7843.0	0.1	5.3	52		33	44.46	14.17
7844.0	0.0	4.7	63		31	44.41	14.15
7845.0	0.1	5.8	55		25	44.36	14.13
7846.0	0.1	6.1	58		21	44.30	14.10
7847.0	0.4	7.9	54		14	44.24	14.08
7848.0	0.3	7.5	56		12	44.16	14.04
7849.0	0.3	7.8	57		3	44.09	14.01
7850.0	0.6	8.5	49		0	44.01	13.97
7851.0	2	10.2	41	0.2	0	43.91	13.92
7852.0	3	10.9	41	0.2	0	43.81	13.86

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. PORDSITY FEET	CUM. HYCARB FEET
7853.0	4	11.6	40	0.2	0	43.70	13.79
7854.0	3	11.1	42	0.2	0	43.58	13.73
7855.0	2	10.4	45	0.3	0	43.48	13.66
7856.0	2	10.7	44	0.2	0	43.37	13.61
7857.0	5	11.8	37	0.2	2	43.26	13.54
7858.0	10	12.7	29	0.2	9	43.14	13.47
7859.0	10	12.8	25		16	43.02	13.37
7860.0	0.0	2.8	100		42	42.93	13.33
7869.0	0.0	0.0	0		0	0.00	0.00
7877.0	0.0	3.8	100		41	42.78	13.33
7878.0	0.0	2.8	100		34	42.75	13.33
7879.0	0.0	2.6	100		43	42.72	13.33
7881.0	0.1	5.4	52		40	42.63	13.30
7882.0	0.0	4.4	93		31	42.58	13.28
7883.0	0.0	5.4	72		23	42.54	13.27
7884.0	0.0	4.8	77		20	42.48	13.25
7885.0	0.0	6.1	70		8	42.43	13.24
7886.0	0.3	7.7	55		2	42.37	13.22
7887.0	0.8	8.8	47		0	42.29	13.18
7888.0	1	9.3	45		0	42.20	13.14
7889.0	0.9	8.6	44		0	42.11	13.08
7890.0	0.7	8.7	48		0	42.02	13.04
7891.0	0.6	8.4	51		0	41.93	12.99
7892.0	0.0	6.2	73		8	41.85	12.96
7893.0	0.0	5.0	99		18	41.79	12.94
7894.0	0.0	2.0	100		48	41.75	12.94
7901.0	0.0	4.3	100		37	41.70	12.94
7902.0	0.0	7.4	70		14	41.66	12.94
7903.0	0.2	7.6	66		10	41.58	12.92
7904.0	0.0	5.5	71		21	41.51	12.90
7905.0	0.0	3.3	100		31	41.46	12.88
7906.0	0.0	2.3	100		43	41.43	12.88
7912.0	0.0	2.9	100		45	41.34	12.88
7913.0	0.0	3.4	100		43	41.31	12.88
7914.0	0.0	3.2	100		46	41.28	12.88
7915.0	0.0	3.4	100		44	41.25	12.88
7916.0	0.0	3.1	100		9	41.20	12.87
7917.0	0.0	3.8	73		2	41.17	12.87
7918.0	0.0	4.4	63		2	41.13	12.86
7919.0	0.3	7.6	52		2	41.08	12.84
7920.0	0.7	8.8	52		0	41.00	12.80
7921.0	0.2	7.5	59		5	40.91	12.76
7922.0	0.2	7.7	63		4	40.84	12.73

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
7923.0	1	9.8	53		7	40.76	12.70
7924.0	4	11.6	40	0.1	4	40.65	12.64
7925.0	1	9.3	43		0	40.54	12.58
7926.0	0.7	8.6	47	0.0	3	40.45	12.53
7927.0	2	10.7	52		0	40.36	12.48
7928.0	2	11.2	57		0	40.25	12.43
7929.0	2	11.3	59		0	40.13	12.38
7930.0	4	12.5	49	0.2	5	40.02	12.33
7931.0	4	12.9	53		0	39.89	12.27
7932.0	0.0	1.3	100		40	39.80	12.24
7948.0	0.0	4.3	80		46	39.73	12.23
7950.0	0.0	4.2	100		38	39.58	12.23
7951.0	0.0	4.7	84		26	39.54	12.23
7952.0	0.0	3.4	100		28	39.50	12.22
7953.0	0.0	3.0	100		28	39.47	12.22
7954.0	0.0	3.9	100		15	39.43	12.22
7955.0	0.0	4.8	74		16	39.39	12.22
7956.0	0.1	6.0	56		14	39.34	12.20
7957.0	0.1	5.9	63		4	39.28	12.18
7958.0	0.2	6.9	57		4	39.22	12.15
7959.0	0.2	7.2	53		2	39.15	12.12
7960.0	0.2	7.0	51		4	39.08	12.09
7961.0	1	9.5	44	0.5	2	39.01	12.05
7962.0	0.0	5.9	67		27	38.91	12.00
7969.0	0.0	4.4	100		48	38.78	11.98
7970.0	0.0	4.5	63		17	38.73	11.97
7971.0	0.0	2.2	100		14	38.69	11.96
7972.0	0.0	0.0	100		44	38.68	11.96
7989.0	0.9	7.6	33		49	38.44	11.96
7990.0	0.2	5.9	36		35	38.37	11.91
7991.0	0.1	8.2	69		4	38.30	11.87
7992.0	0.0	0.8	100		44	38.22	11.85
8017.0	0.0	0.0	0		0	0.00	0.00
8020.0	0.1	5.2	58		40	38.01	11.85
8021.0	0.3	6.9	47		19	37.95	11.83
8022.0	0.1	5.7	49		16	37.88	11.79
8023.0	0.1	5.7	49		14	37.83	11.76
8024.0	0.2	6.6	57		5	37.77	11.73
8025.0	0.1	6.0	65		9	37.70	11.71
8026.0	0.0	5.3	61		20	37.64	11.69
8027.0	0.1	5.5	51		19	37.59	11.67
8028.0	0.2	5.6	38		20	37.54	11.64

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8029.0	0.1	5.7	66		18	37.48	11.61
8030.0	0.0	1.8	100		44	37.44	11.60
8043.0	0.0	0.0	0		0	0.00	0.00
8044.0	0.0	3.8	100		49	37.34	11.60
8045.0	0.0	0.0	0		0	0.00	0.00
8046.0	0.0	0.0	0		0	0.00	0.00
8047.0	0.0	0.0	0		0	0.00	0.00
8048.0	0.0	0.0	0		0	0.00	0.00
8049.0	0.0	0.0	0		0	0.00	0.00
8050.0	0.0	4.8	55		35	37.32	11.60
8051.0	0.1	5.9	48		27	37.27	11.57
8052.0	0.0	5.3	75		20	37.21	11.54
8053.0	0.0	1.6	100		43	37.17	11.54
8056.0	0.0	4.7	71		44	37.12	11.54
8057.0	0.6	8.1	45		16	37.06	11.51
8058.0	2	9.3	31	0.5	11	36.98	11.46
8059.0	2	8.8	30		7	36.89	11.40
8060.0	3	10.1	32		4	36.79	11.34
8061.0	0.0	2.4	100		34	36.72	11.29
8062.0	0.0	0.0	0		0	0.00	0.00
8068.0	0.0	0.0	0		0	0.00	0.00
8069.0	0.0	0.0	0		0	0.00	0.00
8073.0	0.0	0.0	0		0	0.00	0.00
8076.0	0.0	0.0	100		37	36.65	11.29
8077.0	0.0	0.0	100		3	36.65	11.29
8078.0	0.0	3.7	67		0	36.63	11.28
8079.0	0.0	3.7	64		3	36.60	11.27
8080.0	0.0	2.6	100		12	36.56	11.26
8081.0	0.0	1.6	100		26	36.54	11.26
8082.0	0.1	5.5	56		25	36.52	11.26
8083.0	0.2	6.4	45		21	36.46	11.24
8084.0	0.0	4.7	59		34	36.40	11.20
8085.0	0.0	0.0	0		0	0.00	0.00
8086.0	0.0	0.0	0		0	0.00	0.00
8087.0	0.0	0.0	0		0	0.00	0.00
8089.0	0.0	0.0	0		0	0.00	0.00
8090.0	0.0	0.0	0		0	0.00	0.00
8091.0	0.0	0.0	0		0	0.00	0.00
8095.0	0.0	0.0	0		0	0.00	0.00
8101.0	0.0	0.0	0		0	0.00	0.00

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8102.0	0.0	0.0	0		0	0.00	0.00
8103.0	0.0	0.0	0		0	0.00	0.00
8104.0	0.0	0.0	0		0	0.00	0.00
8105.0	0.0	0.0	0		0	0.00	0.00
8106.0	0.0	0.0	0		0	0.00	0.00
8107.0	0.0	0.0	0		0	0.00	0.00
8111.0	0.0	5.0	58		42	36.30	11.18
8112.0	0.0	0.0	0		0	0.00	0.00
8113.0	0.0	0.0	0		0	0.00	0.00
8114.0	0.0	0.0	0		0	0.00	0.00
8115.0	0.0	0.0	0		0	0.00	0.00
8116.0	2	10.3	45		3	36.25	11.16
8117.0	8	12.7	34	0.5	2	36.13	11.09
8118.0	1	10.6	53	0.6	5	36.01	11.01
8119.0	0.0	6.6	74		21	35.92	10.98
8120.0	0.2	6.5	44		41	35.86	10.96
8121.0	0.0	0.0	0		0	0.00	0.00
8122.0	0.0	0.0	0		0	0.00	0.00
8123.0	0.0	0.0	0		0	0.00	0.00
8124.0	0.0	0.0	0		0	0.00	0.00
8125.0	0.0	0.0	0		0	0.00	0.00
8126.0	0.0	4.6	71		46	35.80	10.92
8127.0	0.0	5.0	62		37	35.75	10.91
8128.0	0.1	5.8	56		32	35.70	10.89
8129.0	0.0	5.2	64		32	35.64	10.87
8130.0	0.0	3.6	100		35	35.60	10.86
8131.0	0.0	2.0	100		18	35.57	10.86
8132.0	0.0	4.4	55		14	35.53	10.85
8133.0	0.0	4.3	55		10	35.49	10.83
8134.0	0.0	3.3	100		14	35.45	10.82
8135.0	0.0	0.5	100		38	35.42	10.82
8136.0	0.0	1.0	100		45	35.41	10.82
8137.0	0.0	0.5	100		42	35.41	10.82
8138.0	0.0	4.0	95		38	35.39	10.82
8139.0	0.0	3.9	93		37	35.35	10.82
8140.0	0.1	5.0	51		31	35.31	10.81
8141.0	0.0	4.0	100		35	35.26	10.79
8142.0	0.0	2.4	100		44	35.23	10.79
8143.0	0.0	3.6	100		48	35.20	10.79
8144.0	0.1	5.6	47		32	35.16	10.77
8145.0	0.3	6.7	42		18	35.10	10.74
8146.0	5	10.7	30	0.6	3	35.03	10.70
8147.0	2	9.6	34	0.5	6	34.93	10.62
8148.0	0.4	7.7	51		15	34.83	10.57
8149.0	0.0	4.7	62		38	34.77	10.54
8150.0	0.0	4.7	52		39	34.72	10.52
8151.0	0.1	4.5	39		50	34.67	10.49

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8152.0	0.0	0.0	0		0	0.00	0.00
8153.0	0.0	0.0	0		0	0.00	0.00
8154.0	0.0	4.8	58		42	34.61	10.46
8155.0	0.0	4.5	76		31	34.56	10.44
8156.0	0.1	5.5	65		27	34.51	10.43
8157.0	0.0	5.4	64		27	34.46	10.41
8158.0	0.0	5.0	68		26	34.41	10.39
8159.0	0.0	4.7	68		31	34.36	10.37
8160.0	0.0	3.7	100		32	34.31	10.36
8161.0	0.0	4.8	63		26	34.27	10.36
8162.0	0.2	6.9	53		14	34.21	10.33
8163.0	0.1	5.4	61		18	34.15	10.30
8164.0	0.1	6.1	57		15	34.09	10.28
8165.0	0.1	5.3	56		16	34.03	10.25
8166.0	0.1	5.9	50		11	33.98	10.23
8167.0	0.3	6.9	48		13	33.92	10.20
8168.0	0.1	6.3	60		16	33.85	10.16
8169.0	0.1	5.5	55		26	33.79	10.14
8170.0	0.1	6.2	55		21	33.74	10.12
8171.0	0.1	5.2	52		37	33.68	10.10
8172.0	0.0	3.2	100		50	33.64	10.08
8173.0	0.0	0.0	0		0	0.00	0.00
8177.0	0.0	0.2	100		49	33.60	10.08
8178.0	0.0	1.8	100		45	33.59	10.08
8186.0	0.0	0.3	100		47	33.57	10.08
8187.0	0.0	0.0	100		45	33.57	10.08
8202.0	0.0	3.1	100		43	33.54	10.08
8203.0	0.0	3.2	100		34	33.50	10.08
8204.0	0.0	3.4	100		39	33.47	10.08
8205.0	0.0	2.8	100		41	33.43	10.08
8206.0	0.0	4.3	74		41	33.40	10.08
8207.0	0.1	5.6	50		27	33.36	10.07
8208.0	1	8.8	36		20	33.30	10.03
8209.0	30	15.2	28		18	33.25	10.01
8210.0	0.3	8.3	68		8	33.11	9.91
8211.0	0.0	5.2	95		20	33.03	9.88
8212.0	0.0	2.0	100		41	32.99	9.88
8213.0	0.0	2.6	100		42	32.97	9.88
8214.0	0.0	4.4	81		22	32.95	9.88
8215.0	0.0	0.0	100		46	32.93	9.88
8218.0	0.0	0.0	100		46	32.93	9.88
8219.0	0.0	0.0	100		47	32.93	9.88
8222.0	0.0	1.1	100		43	32.92	9.88

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8223.0	0.0	3.4	100		25	32.90	9.88
8224.0	0.0	0.0	100		47	32.87	9.88
8225.0	0.0	0.3	100		50	32.87	9.88
8228.0	0.0	3.5	100		50	32.85	9.88
8229.0	0.0	3.1	100		43	32.82	9.88
8230.0	0.0	2.3	100		46	32.79	9.88
8231.0	0.0	2.4	100		49	32.77	9.88
8232.0	0.0	3.1	100		46	32.74	9.88
8233.0	0.0	4.5	100		43	32.71	9.88
8234.0	0.0	4.7	100		37	32.66	9.88
8235.0	0.0	5.4	89		31	32.61	9.88
8236.0	0.0	5.6	86		30	32.56	9.87
8237.0	0.0	5.6	83		32	32.50	9.86
8238.0	0.0	5.5	81		33	32.44	9.85
8239.0	0.0	5.9	75		31	32.39	9.84
8240.0	0.0	5.6	77		26	32.33	9.82
8241.0	0.0	4.8	75		36	32.27	9.81
8242.0	0.0	4.9	65		36	32.22	9.80
8243.0	0.1	5.7	50		31	32.17	9.77
8244.0	0.0	4.4	70		34	32.12	9.75
8245.0	0.0	5.2	65		33	32.08	9.74
8246.0	0.0	4.8	65		33	32.03	9.72
8247.0	0.1	8.5	64		25	31.98	9.70
8248.0	0.8	9.3	52		12	31.92	9.68
8249.0	0.6	8.5	53		14	31.82	9.64
8250.0	1	9.3	49		13	31.74	9.60
8251.0	2	10.5	42		10	31.64	9.55
8252.0	4	11.2	35	0.2	13	31.53	9.48
8253.0	2	10.9	55		0	31.42	9.41
8254.0	0.0	0.0	100		38	31.33	9.38
8256.0	0.0	3.4	100		47	31.31	9.38
8257.0	0.0	4.5	64		40	31.28	9.37
8258.0	0.0	5.7	83		18	31.23	9.36
8259.0	0.0	5.9	98		13	31.17	9.36
8260.0	0.0	3.7	100		25	31.12	9.35
8261.0	0.0	3.8	100		24	31.08	9.35
8262.0	0.0	0.0	100		42	31.05	9.35
8263.0	0.0	0.0	100		48	31.05	9.35
8264.0	0.0	0.0	100		48	31.04	9.35
8295.0	0.0	2.7	100		43	31.01	9.35
8296.0	0.0	0.5	100		45	30.99	9.35
8297.0	0.0	3.5	100		47	30.98	9.35
8298.0	0.0	5.1	91		30	30.94	9.35
8299.0	0.0	5.0	91		30	30.89	9.35

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8300.0	0.0	5.3	90		28	30.84	9.35
8301.0	0.0	4.9	100		29	30.79	9.34
8302.0	0.0	5.3	100		32	30.74	9.34
8303.0	0.0	5.0	100		32	30.69	9.34
8304.0	0.0	3.6	100		45	30.64	9.34
8305.0	0.0	3.6	100		45	30.60	9.34
8306.0	0.0	4.9	86		36	30.56	9.34
8307.0	0.0	4.9	100		30	30.51	9.34
8308.0	0.0	3.8	100		33	30.47	9.34
8309.0	0.0	4.4	100		35	30.43	9.34
8310.0	0.0	3.9	100		38	30.38	9.34
8321.0	0.0	2.8	100		49	30.23	9.34
8323.0	0.0	4.2	100		41	30.17	9.34
8324.0	0.0	4.7	76		39	30.13	9.33
8325.0	0.0	5.3	66		37	30.08	9.32
8326.0	0.0	5.0	64		43	30.03	9.30
8327.0	0.0	3.8	100		48	29.98	9.29
8331.0	0.0	4.5	98		41	29.87	9.29
8332.0	0.0	4.6	75		37	29.82	9.29
8333.0	0.0	4.3	100		38	29.78	9.28
8343.0	0.0	4.3	100		44	29.66	9.28
8344.0	0.0	5.3	63		40	29.61	9.27
8345.0	0.0	4.4	91		43	29.56	9.25
8346.0	0.0	3.3	100		40	29.52	9.25
8347.0	0.0	3.5	100		41	29.48	9.25
8348.0	0.0	4.5	100		36	29.45	9.25
8349.0	0.0	5.5	78		28	29.40	9.24
8350.0	0.0	6.0	67		24	29.34	9.23
8351.0	0.3	7.3	54		16	29.28	9.21
8352.0	0.3	7.5	55		16	29.20	9.17
8353.0	0.0	3.9	100		27	29.13	9.14
8354.0	0.0	2.2	100		37	29.09	9.14
8355.0	0.0	3.7	100		40	29.07	9.14
8356.0	0.0	4.0	100		35	29.03	9.14
8357.0	0.0	3.6	100		30	28.99	9.14
8358.0	0.0	3.8	100		27	28.95	9.14
8359.0	0.0	4.8	77		26	28.91	9.14
8360.0	0.0	4.3	100		29	28.86	9.13
8361.0	0.0	3.8	100		32	28.82	9.13
8362.0	0.0	3.7	100		34	28.78	9.13
8363.0	0.0	3.7	100		38	28.75	9.13
8364.0	0.0	4.8	99		37	28.71	9.13
8365.0	0.0	4.6	81		35	28.66	9.12
8366.0	0.0	3.8	100		31	28.61	9.11

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8367.0	0.0	2.6	100		34	28.58	9.11
8368.0	0.0	0.3	100		45	28.56	9.11
8390.0	0.0	2.5	100		0	28.53	9.11
8414.0	0.0	4.3	87		46	28.45	9.11
8415.0	0.1	5.2	56		36	28.40	9.10
8416.0	0.0	3.7	100		44	28.35	9.08
8417.0	0.0	4.5	62		36	28.31	9.08
8418.0	0.0	5.0	41		36	28.27	9.06
8419.0	0.0	3.7	100		46	28.22	9.05
8421.0	0.0	2.6	100		41	28.16	9.05
8422.0	0.0	2.9	100		49	28.13	9.05
8423.0	0.0	3.3	100		49	28.10	9.05
8424.0	0.0	3.8	100		39	28.07	9.05
8425.0	0.0	5.1	64		34	28.03	9.05
8426.0	0.0	5.1	67		32	27.98	9.03
8427.0	0.0	4.9	75		30	27.93	9.01
8428.0	0.0	5.7	76		26	27.88	9.00
8429.0	0.0	6.7	72		23	27.82	8.98
8430.0	0.0	7.8	70		17	27.75	8.96
8431.0	0.4	8.5	65		14	27.66	8.94
8432.0	0.0	7.4	68		17	27.58	8.91
8433.0	0.4	8.8	65		16	27.51	8.89
8434.0	1	10.6	63		14	27.41	8.85
8435.0	0.3	9.5	98		0	27.31	8.82
8436.0	0.3	10.1	86		15	27.21	8.81
8437.0	0.4	10.3	87		10	27.11	8.80
8438.0	1	12.4	68		9	27.00	8.77
8439.0	2	12.7	68		9	26.88	8.73
8440.0	1	12.3	70		9	26.75	8.69
8441.0	1	12.0	70		9	26.63	8.66
8442.0	0.8	11.3	74		10	26.51	8.62
8443.0	1	12.2	70		10	26.39	8.59
8444.0	0.3	9.9	84		12	26.28	8.55
8445.0	0.6	11.1	70		13	26.17	8.53
8446.0	0.2	9.4	77		15	26.07	8.50
8447.0	0.0	7.6	96		18	25.98	8.49
8448.0	0.0	6.7	93		25	25.90	8.48
8449.0	0.0	6.6	96		23	25.84	8.48
8450.0	0.0	6.2	98		26	25.77	8.48
8451.0	0.1	8.8	75		15	25.70	8.47
8452.0	0.1	8.5	76		14	25.62	8.45
8453.0	0.0	7.3	91		15	25.53	8.43
8454.0	0.0	7.0	91		20	25.46	8.43
8455.0	0.0	7.7	77		17	25.39	8.42
8456.0	0.0	6.3	86		20	25.32	8.40

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8457.0	0.0	5.1	93		31	25.25	8.39
8458.0	0.0	3.5	100		43	25.21	8.39
8459.0	0.0	4.4	96		45	25.17	8.39
8460.0	0.0	5.0	84		36	25.12	8.38
8461.0	0.0	3.2	100		34	25.08	8.36
8462.0	0.0	1.9	100		43	25.05	8.36
8471.0	0.0	4.8	100		43	24.99	8.36
8472.0	0.0	5.6	80		30	24.94	8.36
8473.0	0.0	5.9	70		24	24.88	8.34
8474.0	0.0	5.6	67		26	24.82	8.33
8475.0	0.0	3.5	100		31	24.77	8.31
8476.0	0.0	0.7	100		46	24.74	8.31
8500.0	0.0	4.9	70		32	24.66	8.30
8501.0	0.0	5.5	75		27	24.61	8.29
8502.0	0.0	5.9	77		32	24.56	8.28
8503.0	0.0	5.1	76		34	24.50	8.26
8504.0	0.1	5.5	63		36	24.45	8.25
8505.0	0.1	6.5	57		30	24.39	8.23
8506.0	0.0	4.7	72		34	24.33	8.20
8507.0	0.0	2.7	100		36	24.28	8.19
8508.0	0.0	0.0	100		21	24.27	8.19
8509.0	0.0	1.8	100		28	24.27	8.19
8510.0	0.0	4.8	74		29	24.24	8.19
8511.0	0.0	6.4	77		33	24.19	8.18
8512.0	0.0	5.6	89		37	24.13	8.17
8513.0	0.0	4.7	100		39	24.08	8.17
8514.0	0.0	4.9	100		38	24.03	8.17
8515.0	0.0	4.2	100		43	23.98	8.17
8524.0	0.0	3.0	100		47	23.86	8.17
8525.0	0.0	3.4	100		49	23.82	8.16
8552.0	0.0	0.0	0		0	0.00	0.00
8553.0	0.0	0.0	0		0	0.00	0.00
8564.0	0.0	4.0	51		48	23.56	8.16
8565.0	0.0	3.6	56		40	23.52	8.14
8566.0	0.0	2.8	100		43	23.49	8.13
8569.0	0.0	3.7	92		40	23.41	8.13
8570.0	0.0	3.7	70		36	23.37	8.12
8571.0	0.0	1.2	100		42	23.34	8.12
8577.0	0.0	2.7	100		42	23.29	8.12
8578.0	0.0	3.1	100		45	23.26	8.12
8579.0	0.0	3.1	100		47	23.23	8.12

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8580.0	0.0	3.5	99		48	23.20	8.12
8581.0	0.0	2.7	100		47	23.17	8.12
8582.0	0.0	0.3	100		49	23.11	8.12
8591.0	0.0	0.0	0		0	0.00	0.00
8593.0	0.0	3.2	100		41	23.10	8.12
8594.0	0.1	6.7	63		27	23.06	8.11
8595.0	0.0	5.8	68		19	22.99	8.08
8596.0	0.1	6.0	56		20	22.93	8.06
8597.0	0.4	8.0	52		18	22.86	8.03
8598.0	0.0	5.3	74		21	22.79	8.00
8599.0	0.1	6.2	63		19	22.73	7.98
8600.0	0.1	5.0	53		23	22.67	7.95
8601.0	0.1	5.6	52		26	22.61	7.93
8602.0	0.1	6.2	55		23	22.55	7.90
8603.0	2	10.0	41		15	22.49	7.87
8604.0	7	11.8	31	0.2	16	22.38	7.80
8605.0	0.9	8.8	43		8	22.26	7.72
8606.0	0.3	7.0	47		12	22.18	7.68
8607.0	0.0	3.5	100		31	22.13	7.66
8608.0	0.0	0.0	0		0	0.00	0.00
8609.0	0.0	0.0	0		0	0.00	0.00
8610.0	0.0	0.0	0		0	0.00	0.00
8611.0	0.0	0.0	0		0	0.00	0.00
8615.0	0.4	7.4	45		22	21.90	7.63
8616.0	1	8.4	35	0.5	11	21.90	7.58
8617.0	2	9.4	29	0.5	13	21.82	7.52
8618.0	0.5	6.8	32		15	21.73	7.46
8619.0	0.1	4.8	35		29	21.67	7.42
8620.0	0.1	4.8	34		33	21.62	7.39
8621.0	0.1	4.6	38		34	21.57	7.36
8622.0	0.0	3.2	100		37	21.53	7.34
8623.0	0.0	0.0	0		0	0.00	0.00
8624.0	0.0	0.0	0		0	0.00	0.00
8625.0	20	11.3	18		47	21.50	7.34
8626.0	0.4	6.5	33		22	21.39	7.26
8627.0	0.2	6.0	36		13	21.34	7.22
8628.0	0.0	2.7	100		39	21.29	7.20
8636.0	0.1	4.9	45		48	21.22	7.20
8637.0	0.0	3.9	92		49	21.17	7.17
8638.0	0.0	0.0	0		0	0.00	0.00
8639.0	0.0	0.0	0		0	0.00	0.00
8640.0	0.0	0.0	0		0	0.00	0.00
8641.0	0.0	4.7	52		34	21.10	7.15

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8642.0	0.3	7.4	54		12	21.06	7.14
8646.0	0.0	3.1	100		38	20.97	7.13
8647.0	0.0	3.6	100		36	20.94	7.13
8648.0	0.1	5.2	50		28	20.90	7.11
8649.0	0.5	7.9	44		6	20.83	7.08
8650.0	0.2	6.5	50		20	20.75	7.04
8651.0	0.1	6.6	65		10	20.69	7.01
8652.0	0.2	7.4	58		14	20.62	6.98
8653.0	1	9.6	44		10	20.55	6.95
8654.0	1	9.2	46		8	20.45	6.89
8655.0	1	9.3	47	0.70	6	20.35	6.84
8656.0	0.7	8.8	49		8	20.26	6.79
8657.0	0.5	8.2	53		11	20.18	6.75
8658.0	0.6	8.6	50		14	20.10	6.71
8659.0	0.6	8.5	50		11	20.01	6.67
8660.0	0.6	8.3	50		11	19.93	6.63
8661.0	0.7	8.6	49		10	19.85	6.59
8662.0	0.1	6.2	54		23	19.77	6.55
8663.0	0.4	7.9	50		16	19.70	6.52
8664.0	0.5	8.2	49		14	19.63	6.48
8665.0	1	9.3	45		12	19.54	6.43
8666.0	0.8	8.7	47		12	19.45	6.39
8667.0	1	9.3	40		13	19.36	6.34
8668.0	0.0	0.0	0		0	0.00	0.00
8669.0	0.0	0.0	0		0	0.00	0.00
8670.0	2	10.7	45		8	19.19	6.23
8671.0	20	14.2	26		9	19.07	6.18
8672.0	0.0	0.0	0		0	0.00	0.00
8673.0	1	10.4	53		10	18.93	6.05
8674.0	0.1	8.9	69		12	18.83	6.01
8675.0	0.1	8.6	72		13	18.74	5.98
8676.0	0.1	8.9	70		12	18.66	5.96
8677.0	0.5	9.0	67		12	18.57	5.93
8678.0	0.3	8.4	66		15	18.48	5.90
8679.0	0.4	8.4	64		15	18.40	5.87
8680.0	0.4	8.7	65		13	18.31	5.84
8681.0	0.4	8.6	64		14	18.22	5.81
8682.0	0.1	8.3	67		15	18.14	5.78
8683.0	0.1	8.0	68		18	18.05	5.76
8684.0	0.3	8.0	64		19	17.98	5.73
8685.0	0.2	7.4	64		18	17.90	5.70
8686.0	0.2	7.5	63		19	17.83	5.68
8687.0	0.4	7.7	53		15	17.75	5.65
8688.0	0.5	7.5	42		15	17.67	5.61
8689.0	0.1	5.9	57		22	17.60	5.57
8690.0	0.1	5.5	64		29	17.54	5.54
8691.0	0.0	5.0	67		32	17.49	5.53

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8692.0	0.0	4.7	77		31	17.44	5.51
8693.0	0.2	7.1	65		20	17.39	5.50
8694.0	0.2	7.0	64		21	17.32	5.47
8695.0	0.0	5.6	71		27	17.25	5.45
8696.0	0.0	5.2	68		28	17.20	5.43
8697.0	0.0	0.0	0		0	0.00	0.00
8698.0	0.0	0.0	0		0	0.00	0.00
8699.0	0.0	0.0	0		0	0.00	0.00
8700.0	0.0	0.0	0		0	0.00	0.00
8701.0	0.0	2.2	100		39	17.14	5.41
8702.0	0.1	9.0	75		8	17.12	5.41
8703.0	0.3	7.8	56		7	17.03	5.39
8704.0	0.2	6.7	53		7	16.95	5.35
8705.0	0.1	6.3	51		7	16.89	5.32
8706.0	0.2	6.8	51		18	16.82	5.29
8707.0	0.0	4.8	70		36	16.76	5.26
8708.0	0.0	4.5	100		43	16.72	5.25
8710.0	0.0	4.7	81		40	16.63	5.25
8711.0	0.1	5.5	57		29	16.58	5.24
8712.0	0.2	6.6	52		17	16.52	5.21
8713.0	0.1	5.3	54		26	16.46	5.18
8714.0	0.1	5.2	56		29	16.41	5.16
8715.0	0.0	3.7	100		34	16.36	5.14
8716.0	0.0	4.2	75		28	16.32	5.14
8717.0	0.0	3.7	100		34	16.28	5.13
8718.0	0.0	2.9	100		35	16.24	5.13
8719.0	0.0	2.3	100		46	16.22	5.13
8720.0	0.0	2.6	100		50	16.19	5.13
8750.0	0.0	3.0	100		44	16.07	5.13
8751.0	0.0	3.9	100		44	16.04	5.13
8752.0	0.0	4.2	100		46	16.00	5.13
8756.0	0.0	3.8	100		39	15.88	5.13
8757.0	0.0	1.9	100		50	15.85	5.13
8761.0	0.0	1.9	100		44	15.81	5.13
8762.0	0.0	2.9	100		43	15.78	5.13
8763.0	0.0	3.4	100		46	15.75	5.13
8764.0	0.0	3.9	100		47	15.71	5.13
8765.0	0.0	3.4	100		45	15.67	5.13
8766.0	0.0	2.7	100		46	15.64	5.13
8767.0	0.0	3.1	100		46	15.62	5.13
8768.0	0.0	3.0	100		47	15.58	5.13
8769.0	0.0	0.5	100		47	15.56	5.13
8770.0	0.0	0.1	100		48	15.56	5.13
8771.0	0.0	2.7	100		41	15.55	5.13

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8772.0	0.0	3.5	100		38	15.52	5.13
8773.0	0.0	4.5	73		17	15.49	5.13
8774.0	0.1	5.1	36		3	15.44	5.12
8775.0	0.4	6.1	28		0	15.39	5.09
8776.0	0.2	5.3	34		0	15.33	5.05
8777.0	0.2	5.7	32		5	15.28	5.01
8778.0	0.9	7.9	34		10	15.21	4.97
8779.0	0.4	7.3	47		17	15.13	4.92
8780.0	0.4	7.4	45		15	15.06	4.88
8781.0	5	9.9	26		19	14.98	4.83
8782.0	0.0	0.0	0		0	0.00	0.00
8783.0	0.0	4.3	99		30	14.85	4.74
8784.0	0.4	8.4	60		2	14.77	4.71
8785.0	0.2	6.5	48		8	14.70	4.68
8786.0	0.0	3.9	96		31	14.64	4.65
8787.0	0.0	3.3	100		44	14.60	4.64
8788.0	0.0	1.5	100		40	14.57	4.64
8789.0	0.0	0.4	100		40	14.56	4.64
8790.0	0.0	1.4	100		25	14.55	4.64
8791.0	0.0	3.0	100		20	14.54	4.64
8792.0	0.0	3.4	100		16	14.50	4.64
8793.0	0.0	4.4	77		13	14.47	4.64
8794.0	0.0	3.5	100		11	14.43	4.64
8795.0	0.0	2.9	100		12	14.39	4.64
8796.0	0.0	0.9	100		29	14.37	4.64
8797.0	0.0	2.0	100		35	14.36	4.64
8798.0	0.0	3.0	100		33	14.33	4.64
8799.0	0.0	4.6	83		27	14.30	4.64
8800.0	0.0	4.7	71		24	14.25	4.63
8801.0	0.0	2.6	100		27	14.21	4.62
8802.0	0.0	3.6	100		22	14.18	4.62
8803.0	0.1	6.0	55		16	14.14	4.61
8804.0	0.0	4.4	67		33	14.08	4.59
8805.0	0.0	0.0	0		0	0.00	0.00
8806.0	0.0	0.0	0		0	0.00	0.00
8807.0	0.0	0.0	0		0	0.00	0.00
8808.0	0.0	4.3	52		40	14.04	4.57
8813.0	0.0	0.0	0		0	0.00	0.00
8814.0	0.0	0.0	0		0	0.00	0.00
8815.0	0.0	0.0	0		0	0.00	0.00
8816.0	0.0	0.0	0		0	0.00	0.00
8817.0	0.0	0.0	0		0	0.00	0.00
8818.0	0.0	0.0	0		0	0.00	0.00
8819.0	0.0	0.0	0		0	0.00	0.00
8820.0	0.0	0.0	0		0	0.00	0.00
8821.0	0.0	0.0	0		0	0.00	0.00
8822.0	0.0	0.0	0		0	0.00	0.00

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8826.0	0.0	0.0	0		0	0.00	0.00
8827.0	0.0	0.0	0		0	0.00	0.00
8828.0	0.0	0.0	0		0	0.00	0.00
8829.0	0.0	0.0	0		0	0.00	0.00
8830.0	0.0	0.0	0		0	0.00	0.00
8833.0	0.0	2.8	100		45	13.74	4.54
8834.0	0.0	1.4	100		36	13.72	4.54
8835.0	0.0	1.9	100		41	13.70	4.54
8841.0	0.0	4.7	82		42	13.54	4.54
8842.0	0.2	7.0	56		1	13.49	4.53
8843.0	1	8.4	38		2	13.41	4.49
8844.0	1	9.1	38	0.6	0	13.32	4.43
8845.0	1	9.0	40	0.6*	0	13.23	4.38
8846.0	2	9.2	38	0.7*	0	13.14	4.32
8847.0	2	9.1	36	0.7	0	13.05	4.26
8848.0	2	9.1	35		0	12.95	4.20
8849.0	0.9	7.9	35	0.7*	1	12.87	4.14
8850.0	1	8.3	34	0.5	1	12.79	4.09
8851.0	2	9.2	38		0	12.70	4.04
8852.0	0.5	8.5	53		2	12.61	3.98
8853.0	0.0	4.2	82		28	12.53	3.95
8854.0	0.0	3.0	100		34	12.50	3.95
8855.0	0.0	3.2	100		42	12.47	3.95
8856.0	0.0	4.4	100		45	12.43	3.95
8857.0	0.1	5.8	56		34	12.39	3.94
8858.0	0.2	6.1	48		17	12.33	3.92
8859.0	0.2	5.8	43		9	12.27	3.88
8860.0	0.1	5.5	45		9	12.21	3.85
8861.0	0.1	5.6	41		8	12.15	3.82
8862.0	0.0	5.1	62		7	12.10	3.79
8863.0	0.0	5.8	83		12	12.05	3.77
8864.0	0.0	3.0	100		26	11.99	3.76
8867.0	0.0	4.3	100		36	11.93	3.76
8868.0	0.1	6.1	53		24	11.88	3.76
8869.0	1	8.7	37		7	11.82	3.72
8870.0	0.6	7.7	41		6	11.73	3.67
8871.0	0.4	7.6	47		4	11.66	3.63
8872.0	0.4	7.4	47		4	11.58	3.59
8873.0	0.3	7.1	46		5	11.51	3.55
8874.0	0.1	6.2	50		8	11.44	3.51
8875.0	0.3	7.1	49		6	11.37	3.48
8876.0	0.2	6.7	49		8	11.30	3.44
8877.0	0.8	8.1	39		8	11.24	3.41
8878.0	0.4	6.9	41		4	11.15	3.35

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8879.0	0.0	4.9	64		12	11.09	3.32
8880.0	0.0	3.2	100		29	11.04	3.30
8881.0	0.0	3.1	100		22	11.01	3.30
8882.0	0.0	0.3	100		44	10.98	3.30
8883.0	0.0	2.7	100		44	10.97	3.30
8884.0	0.0	3.3	100		31	10.95	3.30
8885.0	0.0	2.4	100		38	10.92	3.30
8886.0	0.0	2.6	100		40	10.89	3.30
8887.0	0.0	3.9	98		39	10.86	3.30
8888.0	0.0	4.2	100		22	10.83	3.30
8889.0	0.0	3.2	100		44	10.79	3.30
8890.0	0.0	4.6	83		47	10.76	3.30
8891.0	0.0	3.2	100		39	10.72	3.30
8892.0	0.0	3.8	100		44	10.68	3.30
8893.0	0.1	6.2	50		32	10.64	3.29
8894.0	0.2	6.9	51		14	10.58	3.26
8895.0	3	10.8	38		1	10.50	3.21
8896.0	1	9.1	39	0.80	0	10.39	3.15
8897.0	2	9.6	40		0	10.30	3.09
8898.0	3	10.7	38	0.6	0	10.20	3.03
8899.0	5	11.8	35	0.5	0	10.09	2.96
8900.0	8	12.5	33		0	9.97	2.88
8901.0	6	11.5	32		0	9.85	2.80
8902.0	2	9.9	35		0	9.74	2.73
8903.0	0.7	8.1	41		9	9.64	2.67
8904.0	0.2	6.9	54		13	9.56	2.62
8905.0	0.1	5.9	59		20	9.50	2.59
8906.0	0.1	6.5	62		18	9.43	2.56
8907.0	0.0	3.1	100		29	9.37	2.54
8908.0	3	10.7	37		15	9.33	2.53
8909.0	2	9.9	35	0.84	5	9.23	2.47
8910.0	2	10.1	43		3	9.13	2.41
8911.0	3	11.0	43	0.4	4	9.02	2.35
8912.0	1	9.9	47	0.5	5	8.91	2.29
8913.0	0.4	8.2	57		6	8.82	2.24
8914.0	0.7	8.9	52		10	8.74	2.21
8915.0	0.0	3.8	97		25	8.65	2.17
8916.0	0.0	0.0	0		0	0.00	0.00
8917.0	0.0	0.0	0		0	0.00	0.00
8920.0	0.0	4.2	100		46	8.56	2.16
8921.0	0.0	5.4	78		36	8.52	2.15
8922.0	0.0	6.3	68		25	8.46	2.14
8923.0	0.6	7.6	40		13	8.40	2.12
8924.0	0.3	7.8	58		9	8.32	2.07
8925.0	0.0	1.6	100		43	8.26	2.05
8927.0	0.0	3.9	100		47	8.20	2.05

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8928.0	0.0	3.8	100		47	8.17	2.05
8929.0	0.0	3.9	100		47	8.13	2.05
8930.0	0.0	4.0	100		48	8.09	2.05
8931.0	0.0	4.2	100		47	8.05	2.05
8932.0	0.0	4.1	100		46	8.01	2.05
8933.0	0.0	4.5	100		47	7.97	2.05
8934.0	0.0	4.7	69		48	7.92	2.05
8935.0	0.1	5.5	50		36	7.87	2.03
8936.0	0.0	3.7	100		40	7.82	2.01
8937.0	0.0	2.6	100		50	7.79	2.01
8939.0	0.0	4.5	100		47	7.73	2.01
8940.0	0.0	5.2	68		18	7.68	2.00
8941.0	0.0	5.0	69		16	7.63	1.98
8942.0	0.0	5.6	69		18	7.58	1.97
8943.0	0.1	6.2	58		14	7.52	1.95
8944.0	0.2	6.5	54		10	7.46	1.92
8945.0	0.2	7.0	61		7	7.39	1.89
8946.0	0.1	7.0	65		11	7.32	1.86
8947.0	0.7	8.7	51		7	7.25	1.83
8948.0	0.6	8.7	51		0	7.16	1.79
8949.0	0.7	8.9	51		2	7.07	1.75
8950.0	1	9.8	48		0	6.98	1.70
8951.0	2	10.1	44	0.5	5	6.88	1.65
8952.0	2	10.0	40		6	6.78	1.59
8953.0	0.2	6.8	85		12	6.69	1.54
8954.0	0.0	4.9	75		27	6.63	1.51
8955.0	0.0	5.1	60		36	6.58	1.50
8956.0	0.0	3.3	100		35	6.53	1.48
8957.0	0.0	2.1	100		50	6.50	1.48
8958.0	0.0	6.3	75		30	6.47	1.48
8959.0	0.8	10.0	62		10	6.40	1.46
8960.0	0.5	8.9	62		7	6.31	1.43
8961.0	0.0	6.0	84		15	6.23	1.41
8962.0	0.0	2.7	100		34	6.17	1.40
8963.0	0.0	4.2	100		49	6.14	1.40
8964.0	0.0	4.8	100		33	6.10	1.40
8965.0	0.0	4.6	100		29	6.05	1.40
8966.0	0.0	5.3	100		26	6.00	1.40
8967.0	0.5	10.3	77		1	5.93	1.40
8968.0	0.9	10.5	66		0	5.83	1.37
8969.0	0.4	8.5	64		7	5.73	1.33
8970.0	0.0	6.3	71		21	5.65	1.31
8971.0	0.0	6.3	72		13	5.59	1.29
8972.0	0.9	9.1	48		0	5.51	1.26
8973.0	2	9.8	43	0.7*	2	5.42	1.21
8974.0	0.8	8.9	48		4	5.32	1.16
8975.0	0.7	8.6	47		4	5.24	1.11

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
8976.0	0.3	8.2	62		8	5.15	1.07
8977.0	0.0	3.0	100		32	5.08	1.05
8978.0	0.0	3.4	100		45	5.05	1.05
8979.0	0.0	4.6	100		36	5.01	1.05
8980.0	0.2	9.1	71		14	4.96	1.04
8981.0	0.2	9.4	73		6	4.88	1.01
8982.0	0.8	10.2	65		3	4.77	0.98
8983.0	2	11.7	62		0	4.67	0.95
8984.0	2	12.5	60		0	4.55	0.90
8985.0	0.1	8.4	85		10	4.43	0.86
8986.0	0.0	3.0	100		32	4.36	0.85
8987.0	0.0	3.5	100		42	4.33	0.85
8988.0	0.0	4.5	100		40	4.29	0.85
8989.0	0.0	5.2	86		32	4.24	0.85
8990.0	0.0	3.0	100		32	4.20	0.84
8991.0	0.0	1.3	100		43	4.17	0.84
8992.0	0.0	0.9	100		41	4.16	0.84
8993.0	0.0	2.2	100		34	4.14	0.84
8994.0	0.0	3.0	100		35	4.12	0.84
8995.0	0.0	4.0	100		36	4.09	0.84
8996.0	0.0	4.3	100		30	4.05	0.84
8997.0	0.2	7.1	60		13	4.01	0.84
8998.0	0.2	7.3	59		13	3.93	0.81
8999.0	0.2	7.3	62		12	3.86	0.78
9000.0	0.0	6.0	67		22	3.79	0.75
9001.0	0.0	5.0	75		26	3.73	0.73
9002.0	0.0	4.4	100		27	3.69	0.72
9003.0	0.0	4.6	76		31	3.64	0.72
9004.0	0.0	5.0	74		26	3.59	0.71
9005.0	0.1	6.3	68		22	3.54	0.69
9006.0	0.0	6.6	68		19	3.48	0.67
9007.0	0.1	6.7	65		19	3.41	0.65
9008.0	0.3	7.8	59		13	3.34	0.62
9009.0	0.3	8.6	58		9	3.26	0.59
9010.0	0.2	7.3	65		9	3.18	0.56
9011.0	0.6	8.8	56		10	3.10	0.53
9012.0	0.4	8.4	57		12	3.01	0.49
9013.0	0.5	8.6	58		10	2.93	0.45
9014.0	0.4	8.3	59		11	2.84	0.42
9015.0	0.4	8.2	58		13	2.76	0.38
9016.0	0.5	8.7	60		9	2.68	0.35
9017.0	0.0	7.4	70		13	2.59	0.32
9018.0	0.0	4.6	100		26	2.52	0.30
9019.0	0.0	4.8	100		26	2.48	0.30
9020.0	0.0	4.0	100		27	2.43	0.30
9021.0	0.0	3.8	100		29	2.39	0.30
9022.0	0.0	3.5	100		35	2.35	0.30
9023.0	0.0	3.5	100		35	2.32	0.30

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
9024.0	0.0	2.6	100		39	2.29	0.30
9025.0	0.0	2.8	100		44	2.26	0.30
9027.0	0.0	2.4	100		48	2.20	0.30
9028.0	0.0	2.6	100		36	2.18	0.30
9029.0	0.0	2.6	100		37	2.15	0.30
9030.0	0.0	2.2	100		37	2.13	0.30
9031.0	0.0	2.9	100		37	2.10	0.30
9032.0	0.0	5.6	85		18	2.07	0.30
9033.0	0.0	2.6	100		34	2.03	0.29
9034.0	0.0	1.1	100		36	2.00	0.29
9035.0	0.0	2.2	100		36	1.99	0.29
9036.0	0.0	3.5	100		24	1.97	0.29
9037.0	0.0	5.0	71		21	1.93	0.29
9038.0	0.1	5.8	56		11	1.88	0.27
9039.0	0.1	5.5	59		13	1.82	0.25
9040.0	0.0	5.8	72		14	1.76	0.23
9041.0	0.0	6.0	67		20	1.70	0.21
9042.0	0.0	6.0	71		16	1.64	0.19
9043.0	0.0	5.0	76		23	1.59	0.18
9044.0	0.0	4.7	71		18	1.54	0.17
9045.0	0.0	4.2	90		19	1.49	0.15
9046.0	0.0	4.8	90		21	1.45	0.15
9047.0	0.0	6.0	71		16	1.40	0.14
9048.0	0.0	4.5	81		18	1.34	0.13
9049.0	0.0	5.0	71		15	1.30	0.12
9050.0	0.0	5.3	64		11	1.24	0.10
9051.0	0.0	4.6	70		15	1.19	0.08
9052.0	0.0	4.2	81		16	1.15	0.07
9053.0	0.0	4.3	81		15	1.10	0.06
9054.0	0.0	5.1	77		14	1.06	0.05
9055.0	0.0	5.4	73		18	1.01	0.04
9056.0	0.0	4.4	98		16	0.96	0.03
9057.0	0.0	4.5	94		17	0.91	0.03
9058.0	0.1	5.4	63		19	0.86	0.02
9059.0	0.0	4.1	99		19	0.81	0.00
9060.0	0.0	3.9	100		20	0.77	0.00
9061.0	0.0	3.2	100		25	0.73	0.00
9062.0	0.0	3.1	100		22	0.70	0.00
9063.0	0.0	2.4	100		29	0.67	0.00
9064.0	0.0	1.2	100		36	0.66	0.00
9065.0	0.0	3.3	100		31	0.64	0.00
9066.0	0.0	3.5	100		32	0.61	0.00
9067.0	0.0	3.6	100		30	0.57	0.00
9068.0	0.0	2.1	100		33	0.54	0.00
9069.0	0.0	0.3	100		46	0.52	0.00
9070.0	0.0	2.7	100		40	0.51	0.00
9071.0	0.0	3.1	100		34	0.48	0.00

DEPTH FEET	PERM. MD	POROSITY %	WATER SAT. %	HYCARB DENS. GM/CC	CLAY VOLUME %	CUM. POROSITY FEET	CUM. HYCARB FEET
9072.0	0.0	2.4	100		34	0.45	0.00
9073.0	0.0	2.0	100		34	0.43	0.00
9091.0	0.0	2.6	100		48	0.20	0.00
9092.0	0.0	2.0	100		50	0.18	0.00
9114.0	0.0	1.8	100		10	0.03	0.00
9115.0	0.0	2.5	100		0	0.01	0.00

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: U-025187

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: - -

7. UNIT AGREEMENT NAME: NATURAL BUTTES

8. FARM OR LEASE NAME: - -

9. WELL NO.: 18

10. FIELD AND POOL, OR WILDCAT: Natural Buttes

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 10, T10S, R22E SLBM

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: GAS PRODUCING ENTERPRISES, Inc.

3. ADDRESS OF OPERATOR: P. O. Box 749, Denver, CO 80201

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 2401' FWL, 2337' FSL, Sec. 10, T10S, R22E
At top prod. interval reported below: Same
At total depth: Same

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
43-047-30221	7-30-75	Uintah	Utah

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
12-28-75	2-4-76	3-17-76	5094 GR	5096'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
9145	9068	NA	→	Yes	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
Wasatch; Top: 6490; Bottom: 7049 Note: Saraband Log Meas.
Mesaverde; Top: 7437; Bottom: 8954

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: FDC - CNL, DIL, BHC-SONIC

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
4½"	13.5	9140'(KB)	7-7/8"	1600 sxs.50-50 POZ,W/2% gel and 12.5# gilsonite/sk	
8-5/8	24.0	2450'(KB)	10-3/4"	495 sx 50-50 POZ,W/10% gel and 12.5# gilsonite/sk + 100 sx class "G"	
13-3/8	54.5	84'(KB)	17-1/4"	200 sxs. class "G" + 2% CaCl	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8"	5800'	None

31. PERFORATION RECORD (*Interval, size and number*)
6490' - 8954'; 0.41"; 72 perforations

Note: Saraband Log Meas.

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
3-29-76	Flowing	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
3-30-76	24	16/64"		--	TSTM	--	--

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
220 psi	Opsi		--	TSTM	--	--

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): Sold

TEST WITNESSED BY: K. E. Oden

35. LIST OF ATTACHMENTS
2 copies: Saraband Log - All logs sent previously.

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Ron Scott TITLE Area Engineer DATE 4-1-76

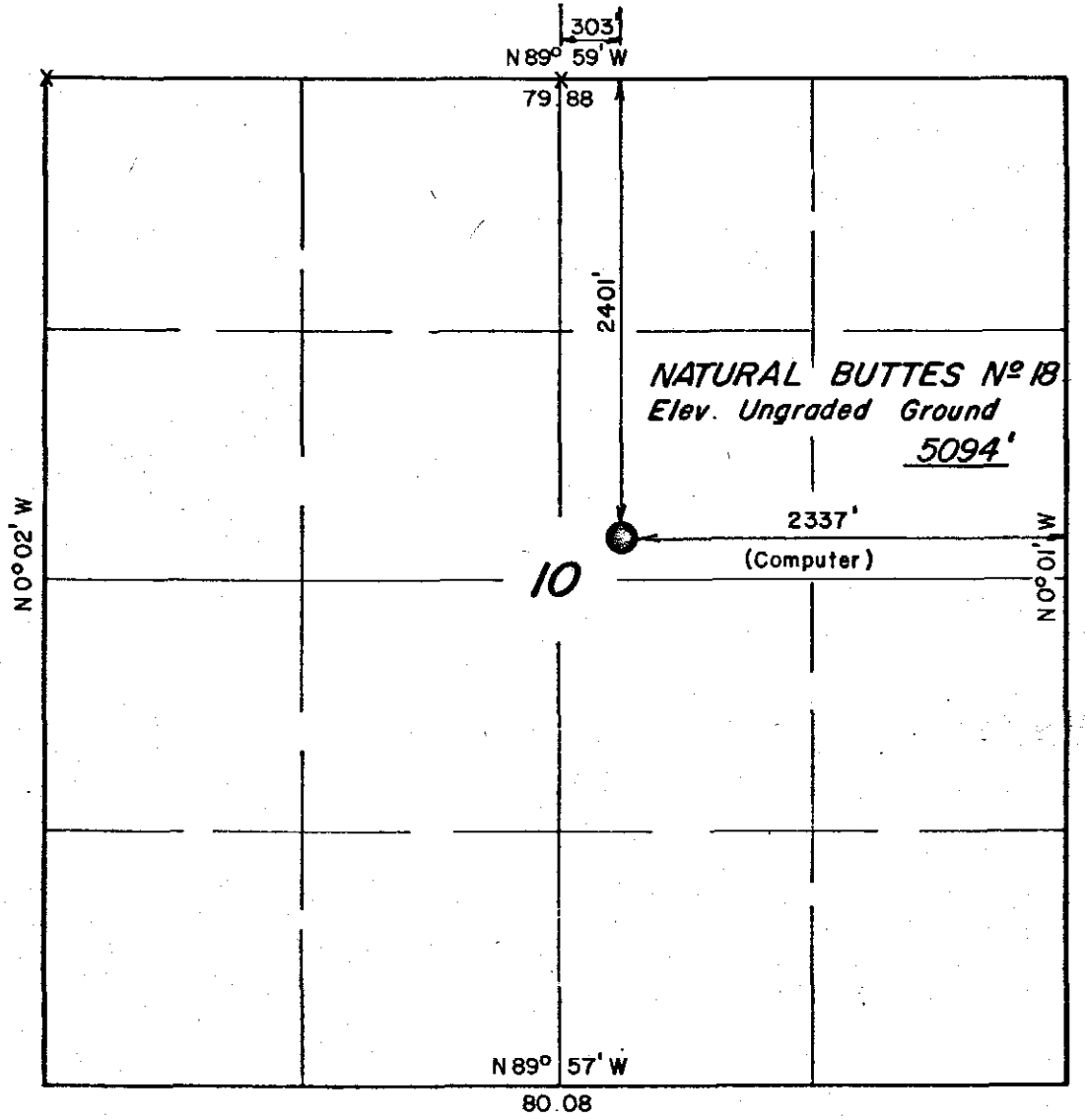
*(See Instructions and Spaces for Additional Data on Reverse Side)

PROJECT

GAS PRODUCING INTERPRISES

Well Location, *Natural Buttes, Nº 18*, located as shown in the SW 1/4 NE 1/4, Section 10, T 10 S, R 22 E, S.L.B.& M. Uintah County, Utah.

T 10 S, R 22 E, S.L.B.& M.



X = Section Corners Located

Fee U-025187

CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR
REGISTRATION Nº 2454
STATE OF UTAH

UINTAH ENGINEERING & LAND SURVEYING
P. O. BOX Q — 110 EAST - FIRST SOUTH
VERNAL, UTAH - 84078

SCALE 1" = 1000'	DATE 1/20/75
PARTY L.T.D., W.P., B.D.	REFERENCES GLO Plat
WEATHER Cold	FILE Gas Producing Enterprises

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: U-025187

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1. OIL WELL ☐ GAS WELL ☒ OTHER

7. UNIT AGREEMENT NAME: NATURAL BUTTES

2. NAME OF OPERATOR: GAS PRODUCING ENTERPRISES, INC.

8. FARM OR LEASE NAME:

3. ADDRESS OF OPERATOR: P. O. BOX 749 - DENVER, COLORADO 80201

9. WELL NO.: 18

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface: 2401' FWL & 2337' FSL, SEC. 10, T10S, R22E

10. FIELD AND POOL, OR WILDCAT: BITTER CREEK FIELD

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: SEC. 10, T10S, R22E SLB&M

RECEIVED
SEP 23 1976
DIVISION OF OIL, GAS & MINING

14. PERMIT NO.	15. ELEVATIONS (Show whether DF, RT, GR, etc.)	12. COUNTY OR PARISH	13. STATE
43-047-30221	5094 GR	UINTAH	UTAH

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF		PULL OR ALTER CASING		WATER SHUT-OFF		REPAIRING WELL	
FRACTURE TREAT	X	MULTIPLE COMPLETE		FRACTURE TREATMENT		ALTERING CASING	
SHOOT OR ACIDIZE		ABANDON*		SHOOTING OR ACIDIZING		ABANDONMENT*	
REPAIR WELL		CHANGE PLANS		(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Massive Frac with:

9,000 gallons 15% acid
36,000 gallons pre-pad
675,000 gallons gelled fluid
1,242,000 pounds of 20/40 sand
81,000 pounds of 40/60 sand

Perforated
Interval: 6,490 - 8,952'

APPROVED BY THE DIVISION OF
OIL, GAS, AND MINING
DATE: 9-24-76
BY: Patrick L. Driscoll

NO ADDITIONAL SURFACE DISTURBANCE REQUIRED FOR THIS ACTIVITY

Verbal appproval received 9-20-76 from Bill Martens, U.S.G.S.

18. I hereby certify that the foregoing is true and correct

SIGNED M. W. Jameson TITLE Senior Engineer DATE SEPT. 17, 1976

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED
OCT 4 1976
DIVISION OF OIL, GAS, & MINING

1. OIL WELL ☐ GAS WELL ☒ XX OTHER

2. NAME OF OPERATOR
Gas Producing Enterprises, Inc.

3. ADDRESS OF OPERATOR
P. O. Box 749 - Denver, Colorado 80201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.)
At surface
2401 FWL & 2337 FSL Sec. 10, T10S, R22E

5. LEASE DESIGNATION AND SERIAL NO.
U-025187

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
Natural Buttes

8. FARM OR LEASE NAME

9. WELL NO.
18

10. FIELD AND POOL, OR WILDCAT
Bitter Creek Field

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 10, T10S, R22E SLB&M

12. COUNTY OR PARISH
Uintah

13. STATE
Utah

14. PERMIT NO.
43-047-30221

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
5094 GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	XX	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐				
(Other)				(Other)			

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Massive Frac with:

9000 gallons of 15% HCl acid
745, 270 gallons gelled fluid
1,380,000 pounds 20/40 sand
100,000 pounds 40/60 sand

Perforated Interval 6,490 - 8,952'

18. I hereby certify that the foregoing is true and correct

SIGNED G. W. Hunt TITLE District Supt. DATE Sept 28, 1976

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form 9-331
(May 1963)

K10 P1

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED
NOV 3 1976
DIVISION OF OIL, GAS & MINING

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR
Gas Producing Enterprises, Inc.

3. ADDRESS OF OPERATOR
P. O. Box 749 Denver, Colorado 80201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
2401 FWL & 2337 FSL, Sec. 10, T10S, R22E

5. LEASE DESIGNATION AND SERIAL NO.
U-025187

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
Natural Buttes

8. FARM OR LEASE NAME

9. WELL NO.
18

10. FIELD AND POOL, OR WILDCAT
Bitter Creek Field

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 10, T10S, R22E

14. PERMIT NO.
43-047-30221

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
5094 GR

12. COUNTY OR PARISH
Uintah

13. STATE
Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☐
(Other) Wash Out Frac Sand			☒	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Snub in hole with 2-3/8" tubing and wash frac sand out of the well bore with nitrogen foam. Return well to production.

APPROVED BY THE DIVISION OF
OIL, GAS, AND MINING
DATE: Nov. 4, 1976
BY: P. L. Driscoll

18. I hereby certify that the foregoing is true and correct

SIGNED G. W. Hunt TITLE District Superintendent DATE October 29, 1976

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR
GAS PRODUCING ENTERPRISES, INC.

3. ADDRESS OF OPERATOR
P. O. BOX 749 - DENVER, COLORADO 80201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
2401 FWL & 2337 FSL SECTION 10, T10S, R22E

5. LEASE DESIGNATION AND SERIAL NO.
U-025187

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
NATURAL BUTTES

8. FARM OR LEASE NAME

9. WELL NO.
18

10. FIELD AND POOL, OR WILDCAT
BITTER CREEK FIELD

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
SECTION 10, T10S, R22E

14. PERMIT NO.
43-047-30221

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
5094 GR

12. COUNTY OR PARISH
UINTAH

13. STATE
UTAH

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Wash out Frac Sand			X
(Other)	☐			(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

SNUBBED IN HOLE WITH 2-3/8" TUBING AND WASHED FRAC SAND OUT OF WELL BORE WITH NITROGEN FOAM. RETURNED WELL TO PRODUCTION.

Filed Sundry Notice
Work Not Completed
12/8/76

18. I hereby certify that the foregoing is true and correct

SIGNED Robert G. Merrill (Robert G. Merrill) TITLE Area Engineer DATE Dec. 2, 1976

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: U-025187

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME: NATURAL BUTTES UNIT

8. FARM OR LEASE NAME:

9. WELL NO.: 18

10. FIELD AND POOL, OR WILDCAT: BITTER CREEK FIELD

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: SECTION 10, T10S, R22E

12. COUNTY OR PARISH: UINTAH

13. STATE: UTAH

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR
GAS PRODUCING ENTERPRISES, INC.

3. ADDRESS OF OPERATOR
P. O. OBX 749 - DENVER, COLORADO 80201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
2401' FWL 2337' FSL SECTION 10, T10S, R22E

14. PERMIT NO.: 43-047-30221

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5094 GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other) WATER DISPOSAL-LINED PIT			X	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Application is hereby made for disposal of subject well's produced water to be made utilizing a lined pit. The well is presently producing an average of ±30 BWPD from the Mesaverde Formation. The evaporation rate for the area, compensated for annual rainfall, is 70 inches per year. The pit dimensions will be 30' X 30' at the surface, tapering down to 25' X 25' having a depth of 10'. The liner is to be made of 20 mil polyethlene, and will be installed as pictured.

Because of the amount of water produced and the size of the pit, it will be necessary to haul excess water from this location to the Natural Buttes Unit No. 14 location (Section 22, T9S, R21E), where a linted pit is already installed (Sundry Notice approved 4/27/77). This pit measures 200' X 200' X 10' and was installed in the same manner as proposed for this well, with the liner made of 30 mil polyethylene.

ATTACHMENTS: (1) TOPO MAP (2) WATER ANALYSIS (3) PIT DESIGN
(4) METHOD PRECIPITANT DISPOSAL

APPROVED BY THE DIVISION OF
OIL, GAS, AND MINING
DATE: July 15, 1977
BY: [signature]

18. I hereby certify that the foregoing is true and correct

SIGNED Frank R. Midkiff TITLE District Superintendent DATE July 1, 1977

(This space for Federal or State office use)

APPROVED BY ________ TITLE ________ DATE ________
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

DWL-451-2-A

DOWELL DIVISION OF THE DOW CHEMICAL COMPANY

LABORATORY LOCATION: Casper

API WATER ANALYSIS REPORT FORM

DATE: Apr. 27, 1977

LAB NO. CL 6482

Company	Sample No.	Date Sampled
Gas Producers	41543	

Field	Legal Description	County or Parish	State
Natural Buttes		Uintah	Utah

Lease or Unit	Well	Depth	Formation	Water, B/D
	#18	10000	Wasatch	

Type of Water (Produced, Supply, etc.)	Sampling Point	Sampled By
Produced		

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	2732	120.2
Calcium, Ca	36	1.8
Magnesium, Mg	7	0.6
Barium, Ba		

ANIONS	mg/l	me/l
Chloride, Cl	3300	92.4
Sulfate, SO_4	215	4.3
Carbonate, CO_3	61	2.0
Bicarbonate, HCO_3	1490	23.8

Total Dissolved Solids (calc.)

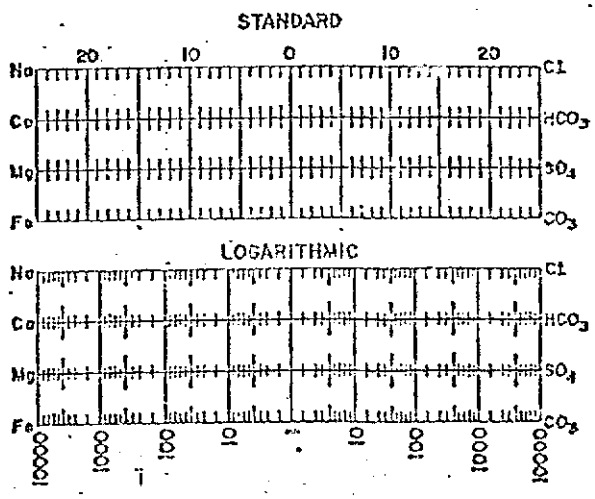
Iron, Fe (total) 7

Sulfide, as H_2S

OTHER PROPERTIES

pH	7.6
Specific Gravity, 60/60 F.	1.000
Resistivity (ohm-meters) ____ F.	

WATER PATTERNS — me/l



REMARKS & RECOMMENDATIONS:

PROPOSED PLAN FOR REMOVAL OF PRECIPITANTS

After solids have been precipitated from the produced waters or blown into the pit from the surrounding area, a vacuum truck will be used to remove solids. Vacuum trucks are used through the industry in removing drilling fluids from reserve pits, steel tanks, etc., and thus are proven as capable of performing the subject task. Produced waters will also be used for workovers in the Unit, as they are compatible with the formations.

SARABAND

A Sandstone Analysis

- **Continuous computation of log data.**
- **Analog and tabular listing of results.**
- **Analysis of sands—both clean and shaly.**

SARABAND is computed using the following logs:

Resistivity — from the Induction Log, Dual Induction or Laterolog.

Density — from FDC—Formation Density Compensated Log.

Neutron — from SNP—Sidewall Neutron Log, or CNP—Compensated Neutron Log.

Sonic — from BHC—Borehole Compensated Sonic Log.

And SP and Gamma Ray are run in conjunction with the above logs.

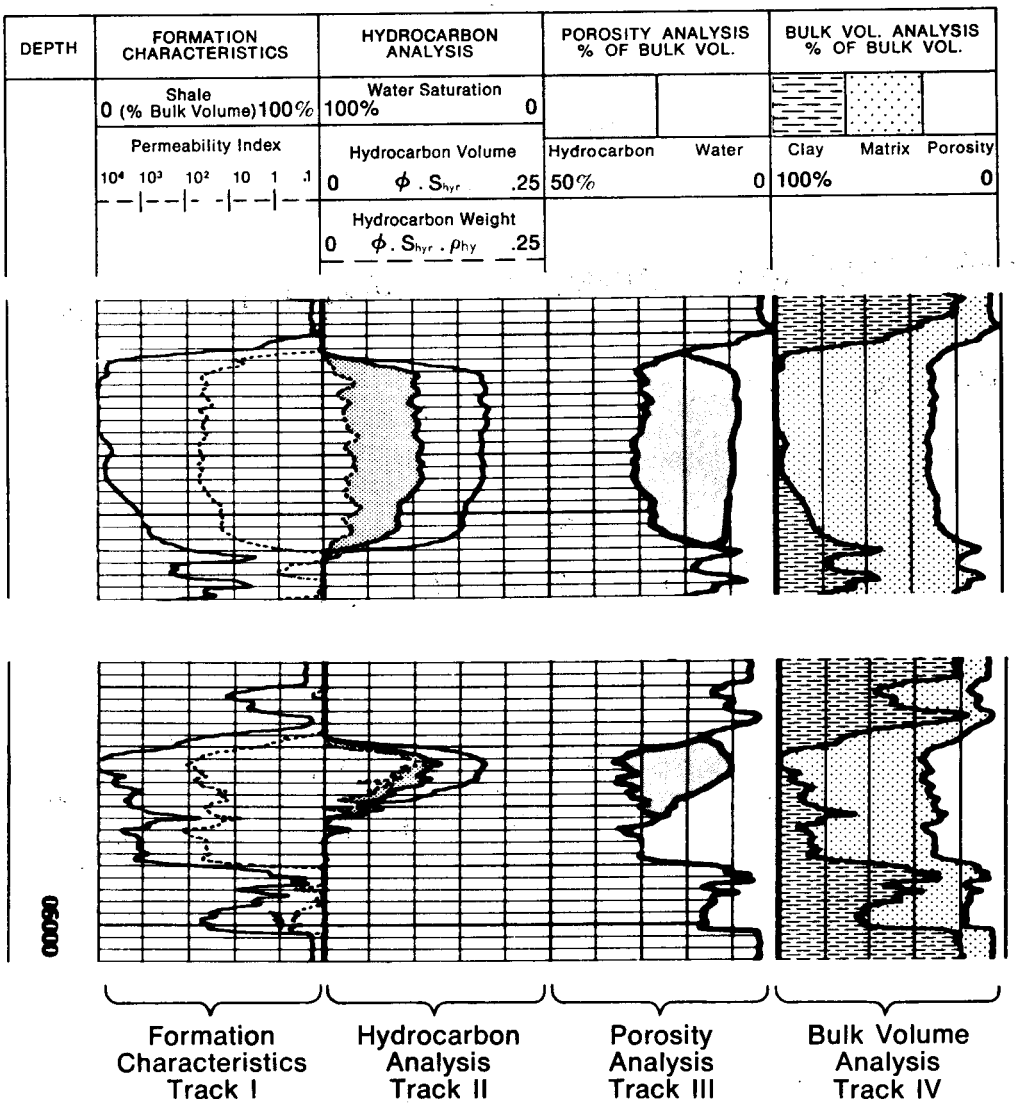
SARABAND
A Sandstone Analysis

Tabular Listing Data

Column 1	Depth in feet.
Column 2	Permeability index in millidarcies.
Column 3	Formation porosity in percent from Neutron-Density data after correction for hydrocarbon and shale effects.
Column 4	Water saturation in percent.
Column 5	Density in gm/cc of hydrocarbon. Hydrocarbon densities in the range between .7 gm/cc and 1.0 gm/cc are all listed as .7* in the tabular listing.
Column 6	V_{clay}, the fraction of bulk volume occupied by wet clay.
Column 7	Total cumulative porosity—feet from the top of the computed section.
Column 8	Total cumulative hydrocarbon—feet from the top of the computed section.

The cumulative numbers in columns 7 and 8 can be used respectively to calculate reservoir pore space and volume of hydrocarbons in place. The total pore space, in barrels per acre, is equal to the difference in the numbers of column 7 at the top and bottom of the zone of interest multiplied by 7758. A similar calculation yields the total barrels per acre of hydrocarbons in place.

SARABAND **A Sandstone Analysis**



Formation Characteristics - Track I

Shale Volume (V_{sh})—Bulk volume fraction of shale, both wet clay and silt. V_{sh} is computed from neutron-density data from a special logic relating other shale indicators (SP, GR and Resistivity) to the volume of shale. This is an excellent correlation curve which should permit the differentiation between sands, shale and shaly sands.
Permeability Index—The scale for this curve is a 5-cycle logarithmic scale.

Hydrocarbon Analysis - Track II

Water Saturation (S_w)—Fraction of pore volume filled with formation water.
Hydrocarbon Volume ($\phi \cdot S_{hyr}$)—Residual hydrocarbon per bulk volume where S_{hyr} is residual hydrocarbon saturation.
Hydrocarbon Weight ($\phi \cdot S_{hyr} \cdot \rho_{hy}$)—Weight of residual hydrocarbon per bulk volume where ρ_{hy} is the density of the hydrocarbon.
The two curves, $\phi \cdot S_{hyr}$ and $\phi \cdot S_{hyr} \cdot \rho_{hy}$, converge in oil zones since the density of oil is close to unity. In light hydrocarbon zones, the two curves diverge.
The ratio of $\phi \cdot S_{hyr} \cdot \rho_{hy}$ to $\phi \cdot S_{hyr}$ is the hydrocarbon density.
The values of hydrocarbon density derived from the computation appear on the tabular listing.

Porosity Volume Analysis - Track III

Porosity (ϕ)—Formation porosity corrected for hydrocarbon and shale effect.
Water-filled Porosity ($\phi \cdot S_w$)—Represents the formation water in the pore space (in per cent of bulk volume).
The area between the two curves corresponds to hydrocarbon-filled porosity.

Bulk Volume Analysis - Track IV

Clay Volume (V_{clay})—SARABAND logic assumes shale to consist of wet clay and silt. V_{clay} represents only the bulk volume fraction of wet clay, whereas V_{sh} of Track I represents the total shale bulk volume (clay plus silt).
Matrix (V_{matrix})—Bulk volume fraction of non-clay solids (includes silt).
Porosity (ϕ)—Formation porosity corrected for hydrocarbon and shale effects.

Tabular Listing

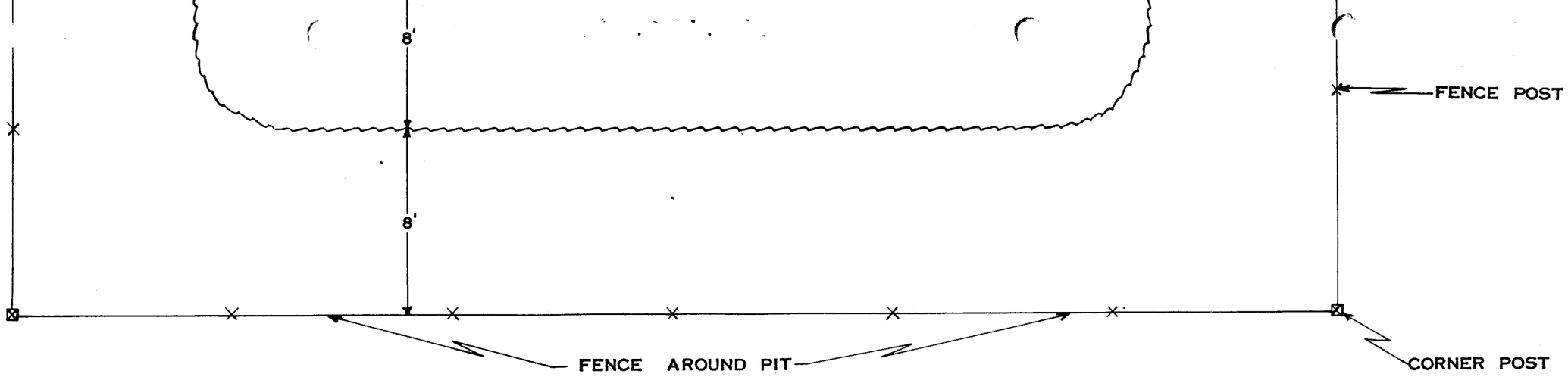
1 DEPTH FEET	2 PERM INDEX MD	3 POROSITY PERCENT	4 WATER SATURATION PERCENT	5 HYDRO-CARBON DENSITY GM/CC	6 CLAY PERCENT	7 TOTAL POROSITY FEET	8 TOTAL HYDRO-CARBON FEET

Partial Listing of Gas Zone in Upper Log Example

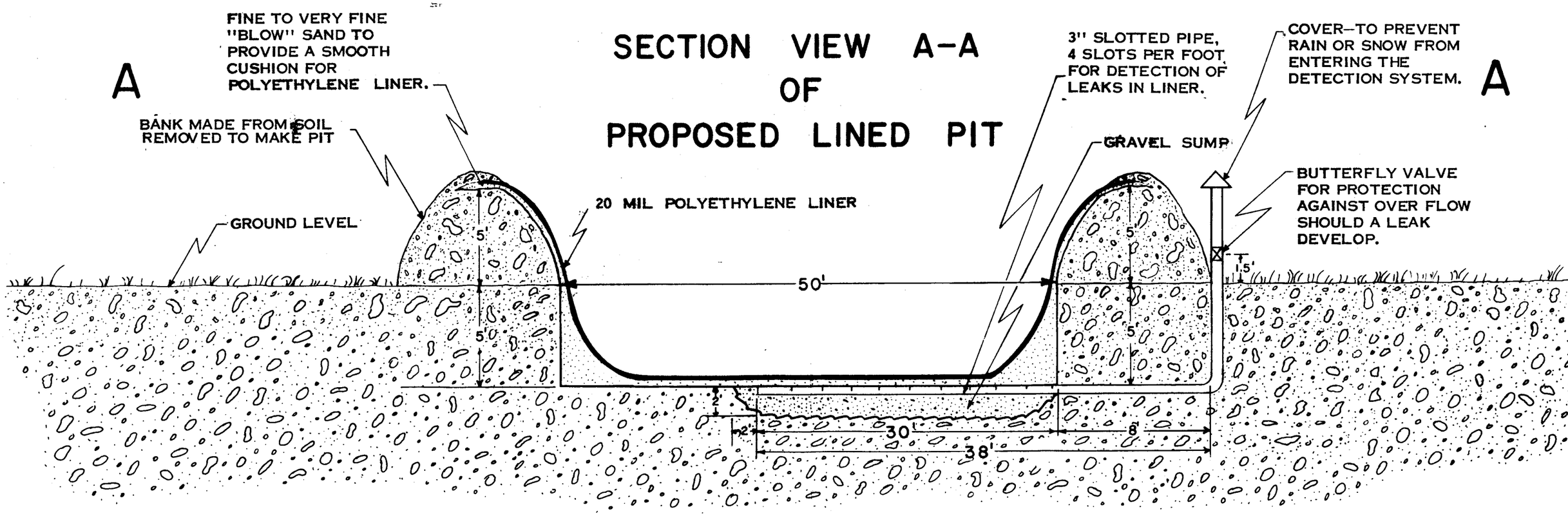
7425	50	25.8	61	.1	2	64.57	6.59
7426	190	26.6	42	.2	2	64.85	6.74
7427	400	30.4	31	.1	2	65.15	6.93
7428	400	29.0	30	.3	0	65.44	7.14
7429	400	28.3	28	.3	0	65.73	7.34
7430	500	29.5	28	.2	0	66.02	7.55
7431	300	28.7	30	.2	0	66.31	7.76
7432	300	27.1	30	.3	0	66.59	7.95
7433	500	29.6	26	.2	0	66.88	8.16
7434	400	28.1	28	.2	0	67.16	8.36
7435	400	28.8	27	.3	0	67.45	8.57
7436	400	29.0	28	.3	0	67.74	8.78
7437	400	29.2	30	.4	1	68.03	8.99
7438	500	30.3	30	.4	2	68.33	9.19
7439	600	31.3	29	.2	3	68.64	9.41
7440	500	31.0	30	.3	4	69.95	9.63
7441	400	30.1	30	.3	2	69.26	9.84
7442	600	31.3	29	.3	1	69.57	10.06
7443	500	30.3	30	.4	2	69.87	10.27
7444	600	31.1	29	.3	2	70.18	10.49
7445	500	31.1	29	.2	3	70.49	10.71
7446	400	30.3	31	.3	4	70.80	10.92
7447	300	29.7	32	.3	6	71.10	11.13
7448	300	28.7	34	.3	8	71.39	11.32

Partial Listing of Oil-Water Zone in Lower Log Example

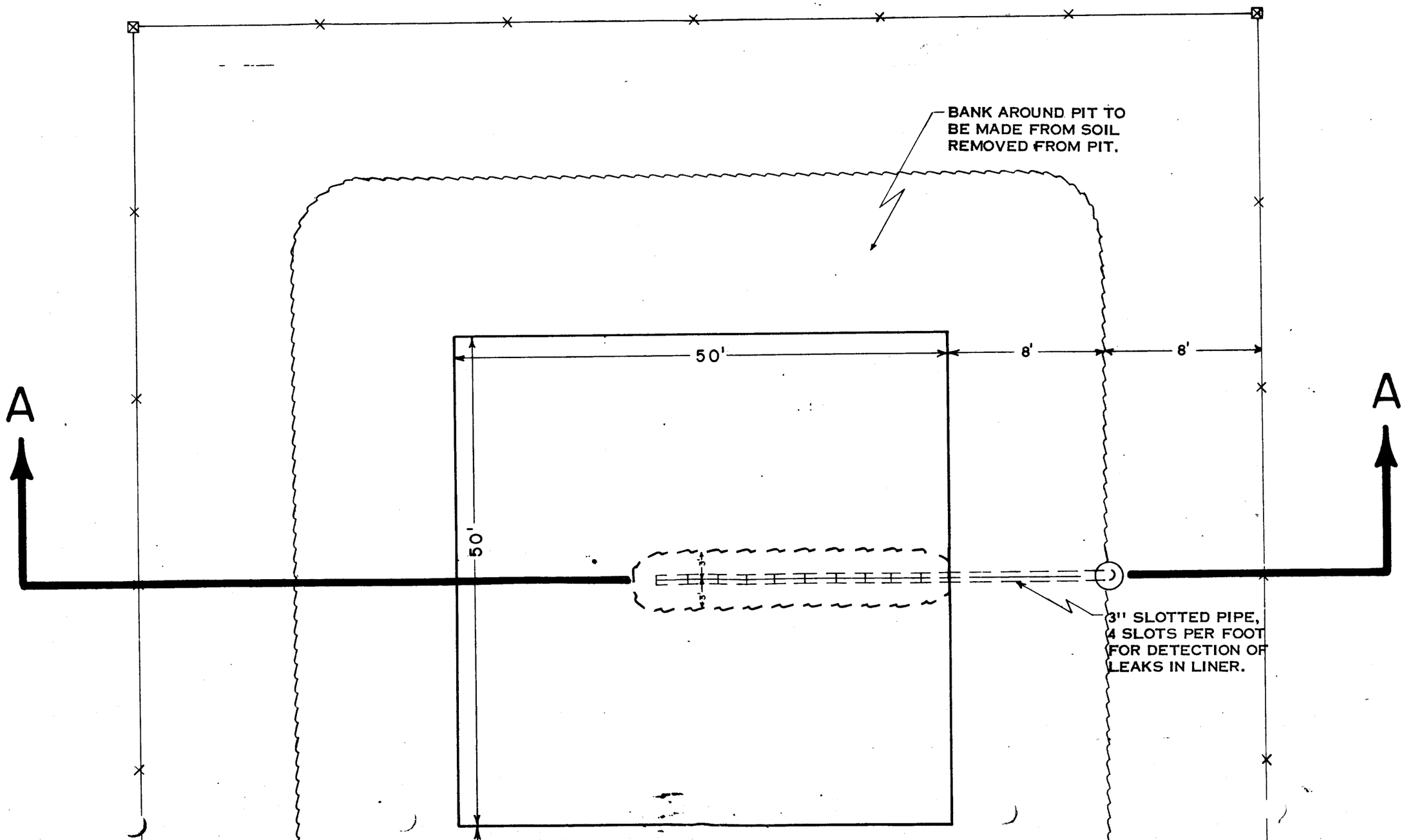
5968	0	11.8	100		49	1.36	.00
5969	4	15.8	99		33	1.51	.00
5970	17	19.0	78		26	1.69	.03
5971	90	25.7	49	.4	19	1.93	.14
5972	500	33.0	35	.7*	3	2.24	.33
5973	800	34.4	30	.7*	0	2.58	.56
5974	700	33.6	30	.7*	0	2.93	.81
5975	500	32.0	32	.7*	3	3.26	1.03
5976	800	35.2	32	.7*	5	3.59	1.25
5977	600	35.5	38	.7*	5	3.94	1.47
5978	160	30.1	52	.7	14	4.25	1.63
5979	170	32.1	58	.5	10	4.57	1.77
5980	300	28.1	80		10	4.87	1.86
5981	400	30.3	74	.1	15	5.17	1.93
5982	200	29.2	83		25	5.47	1.98
5983	200	27.0	97		19	5.72	1.99
5984	300	29.0	98		17	6.00	1.99
5985	1200	33.9	96		8	6.35	2.01
5986	400	30.1	99		13	6.67	2.01
5987	400	29.7	100		13	6.96	2.01
5988	400	29.6	100		14	7.26	2.01
5989	500	30.2	99		12	7.56	2.01
5990	190	27.0	99		20	7.84	2.02
5991	0	13.0	100		47	8.01	2.02



SECTION VIEW A-A OF PROPOSED LINED PIT



TOP VIEW OF LINED PIT



Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR
GAS PRODUCING ENTERPRISES, INC.

3. ADDRESS OF OPERATOR
P. O. OBX 749 - DENVER, COLORADO 80201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
2401' FWL 2337' FSL SECTION 10, T10S, R22E

5. LEASE DESIGNATION AND SERIAL NO.
U-025187

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
NATURAL BUTTES UNIT

8. FARM OR LEASE NAME

9. WELL NO.
18

10. FIELD AND POOL, OR WILDCAT
BITTER CREEK FIELD

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
SECTION 10, T10S, R22E

12. COUNTY OR PARISH
UINTAH

13. STATE
UTAH

14. PERMIT NO.
43-047-30221

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
5094 GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF		PULL OR ALTER CASING		WATER SHUT-OFF		REPAIRING WELL	
FRACTURE TREAT	X	MULTIPLE COMPLETE		FRACTURE TREATMENT		ALTERING CASING	
SHOOT OR ACIDIZE		ABANDON*		SHOOTING OR ACIDIZING		ABANDONMENT*	
REPAIR WELL		CHANGE PLANS		(Other)			
(Other)	Perf Addl. Pay		X				

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

(1) Proposed work will consist of:

(A) Block cement squeezing interval 4400' - 4515' w/100 sx Class "G" containing 2% $CaCl_2$.

(B) Interval from 4464' - 4490' will be perforated with a 3-1/8" casing gun.

(C) Interval 4464' - 4490' will be fractured w/1000 gals acid, 50,600 gals KCl water and 78,250# sand.

(D) Well will be flow tested to clean up after frac and placed on sales as soon as possible.

(2) Estimated starting date is December 20, 1977.

APPROVED BY THE DIVISION OF
OIL, GAS, AND MINING
DATE: 12/14/77
BY: C. B. Feight

RECEIVED
DEC 12 1977
DIVISION OF OIL, GAS & MINING

18. I hereby certify that the foregoing is true and correct
SIGNED J. M. Strickland TITLE Area Engineer DATE 12-8-77

(This space for Federal or State office use)

APPROVED BY ..... TITLE ..... DATE .....
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: U-025187

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

1. OIL WELL ☐ GAS WELL ☒ OTHER

7. UNIT AGREEMENT NAME: NATURAL BUTTES UNIT

2. NAME OF OPERATOR: GAS PRODUCING ENTERPRISES, INC.

8. FARM OR LEASE NAME: NATURAL BUTTES UNIT

3. ADDRESS OF OPERATOR: P. O. OBX 749 - DENVER, COLORADO 80201

9. WELL NO.: NATURAL BUTTES UNIT NO. 18

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 2401' FWL 2337' FSL SECTION 10, T10S, R22E

10. FIELD AND POOL, OR WILDCAT: BITTER CREEK FIELD

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: SECTION 10, T10S, R22E

14. PERMIT NO.: 43-047-30221

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5094 GR

12. COUNTY OR PARISH: UINTAH

13. STATE: UTAH

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) PERFORATE ADD'L PAY ZONE			X
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

PLEASE SEE ATTACHED CHRONOLOGICAL FOR DETAILS OF WORK.

18. I hereby certify that the foregoing is true and correct

SIGNED F.R. Midkiff TITLE District Superintendent DATE August 9, 1978

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

NBU #18 (GPE) (WORKOVER) T 9,145'
Bitter Creek Field PBTD: 9,070'
Uintah County, Utah
AFE: 14999 WI: 100%
ATD: 9,000' SD: 12-27-75
GPE, Inc., Oper.
Gibson Well Service, Contr.
13-3/8" @ 84'; 8-5/8" @ 2450';
4½" @ 9140'
Gross Perf Int: 4326'-8950'

4-22-78 Flow to pit.
RD Gibson Well Service.
FTP 0, SICP 1500#, on 14/64" ck.
Well dead.

4-23-78 Open to pit.
FTP 0, SICP 1500#, on 14/64" ck.
Well dead.

4-24-78 Open to pit - prep to unload w/N_2.
FTP 0, SICP 1500 psi, on 14/64" ck.
Well dead.

4-25-78 Pumped 10,000 SCF, 25,000 down tbg, 75,000 down csg.
Tbg blew down in 10 min. Csg press didn't change.
Tbg - csg annulus sanded off.

4-26-78 Open to pit, on 14/64" ck.
FTP 0, SICP 1600#. Prep to unload w/N_2.

4-27-78 Flow to pit - HGCW w/N_2.
RU N_2 & pumped 45 MCF down 2-3/8" tbg, 120 MCF down csg x tbg annulus. Open to pit on 2" ch, change to 12/64" ck. FTP 1400#, SICP 1600#.

4-28-78 Flowing to pit - WO Mountain Fuel
FTP 1400#, SICP 1500#, on 18/64" ck.
Prep to return to sales.

4-29-78 WO gas analysis.
Flow to pit on 18/64" ck. FTP 1100#, SICP 1300#.
Hvy mist, 1 MMCFD est.

4-30-78 FTP 850#, SICP 1200#, on 18/64" ck.
Hvy mist to pit.

5-1-78 Flow to pit.
FTP 900#, SICP 1200#, on 18/64" ck.

5-2-78 Couldn't put on sales due to N_2, blowing to pit to clean up.

5-3-78 Flowing to pit.
Blowing clean of N_2.

5-4-78 Returned to sales 4 PM, 5-3-78.
FTP 1250 psi, SICP 1350 psi, on 12/64" ck.
1250 MCFD w/25 BWPD. Drop from report.

NBU #18
Bitter Creek Field
Uintah County, Utah
AFE: 14169 WI: 100%
ATD: 9,000' SD: 12-27-75
GPE, Inc., Oper.
Gibson Well Service, Contr.
13-3/8" @ 84'; 8-5/8" @ 2450';
4½" @ 9140'
Perfs: 8950'-6494'

TD: 9145'
BP @ 6150'

4-9-78 Flowing to pit.

4-10-78 Flowing to pit.
FTP 300#, SICP 300#, on 14/64" ck.
1" stream wtr to pit. Small amt gas.

4-11-78 Flow to pit after frac.
FTP 350#, SICP 350#, on 18/64" ck.
200 BWPD, trace of gas.

4-12-78 Flowing to pit.
FTP 750#, SICP 100#.
Flow 1" stream of wtr to pit.

4-13-78 FTP 900 to pit. SICP 100# before blow down.
14/64" ck. 500 MCFD. Took gas sample (pm). Blew down csg side 4½" X 2-3/8" from 100# to 0# in 5 min. Appears that annulus is sanded off.

4-14-78 Flowing to pit.
FTP 900#, SICP 500#, on 14/64" ck.
500 MCFD, 150 BWPD.

4-15-78 Flowing well to pit.
FTP 1100#, SICP 1000#, on 14/64" ck. Est
250 MCFD, HGCW & snd.

4-16-78 Flowing well to pit.
FTP 1100 psi, SICP 1000 psi, on 14/64" ck; Est 300 MCFD w/Hvy mist & snd.

4-17-78 Flowing to pit.
FTP 1100#, SICP 1000#, on 14/64" ck.
Est 250 MCFD, HWCG - TWTB.

4-18-78 Flowing to pit; FTP 1250 psi, SICP 1250 psi, on 14/64" ck; Est 750 MCFD w/50 BW; Prep to MI WO Rig.

4-19-78 Prep to CO frac snd on top of BP @ 6000'.
MI & RU Gibson Well Service; Pumped 150 bbls of 10# brine to kill well; ND tree; NU BOP; TIH w/18 jts 2-3/8" tbg w/tbg @ 4600'.

4-20-78 POOH w/ BP & tbg.
Kill well w/150 bbls 10# brine. PU 2-3/8" tbg. TIH to top of frac snd @ 5874'. PU Swivel reversed out frac snd w/Howco foam & wtr to 6150'. Reversed snd off top of ret. BP. Released BP. Pulled 20 stds. SIFN.

4-21-78 Open to pit.
Pumped 150 bbls 10# brine to kill well. Finished TOOH w/Howco Ret. BP. RIH w/1 jt tbg w/plain collar, Otis X-nipple, 2-3/8" tbg & landed tbg @ 8613' (273 jts). ND BOP. NU tree. Left csg closed & opened tbg to pit on 14/64" ck. 1 hr. SICP 800 psi, FTP 0. Prep to RD WO rig & MO.

NBU #18 (GPE)
Bitter Creek Field
Uintah County, Utah
AFE: WI: 100%
ATE: 9000' SD: 12-27-75
GPE, Inc., Oper.
Gibson Well Service, Inc.:
13-3/8" @ 84'; 8-4/8" @ 2450';
4½" @ 9140'
Gross Perf Int: 6494'-8950'

TD: 9145'
PBTD: 9108'
3-31-78 Prep to finish TOOH w/2-3/8" tbg. Kill well w/150 bbls 10# brine. ND tree & NU BOP. TOOH w/tbg. Pumped 150 bbls 10# brine to re-kill well. TIH w/RBP, set @ 6150'. Load hole w/10# brine. Test to 5500# - held OK. Pulled 8 jts 2-3/8" tbg. Spot 3 sx snd on top of RBP. Pull 6 jts & SDON.

4-1-78 Prep to run temp survey.
POOH w/tbg; PU OWP perf gun; Perf 4 sq holes, 4500'-4501'-4502'-4503'; RU & run Howco cmt retainer, set @ 4490'; Test retainer to 3500#; Test tbg to 4000# - Held OK; Pump 40 bbls 2% KCl wtr @ 3 BPM @ 2400#. Pump 150 sx Class "G" cmt @ 4 BPM @ 2500#; Pulled out of retainer; Reverse 20 sx cmt out on top of retainer; POOH w/tbg; SDON.

TD: 9145'
BP @: 6150'
4-2-78 RU & run temp survey; Top of cmt 4180'. Good bond 4340' to 4180', & 4500' - 4390'; RD Logger; GIH to drl cmt retainer; SDON.

4-3-78 Prep to drl out cmt & retainer.
MI frac tanks.

4-4-78 Prep to TOOH & pref.
Drlg out 5' cmt to top of retainer; Drlg out retainer & cleaned out to top of RBP; Tagged RBP, pulled 2 stds & SDON.

TD: 9145'
BP @: 6150'
4-5-78 Flowing to pit on full 2". Prep to frac on 4-7-78. Drlg cmt to 1' above frac sand on BP @ 6150'. Circ hold clean. POOH w/2-3/8" tbg. RU Western & press tested 4½" csg to 4000 psi, held OK. RU OWP & perf 4½" csg w/3-1/8" perf gun @ 4326', 4327', 4364', 4365', all w/2 holes. 4469', 4470', 4471', 4472', 4609', 4610', 4611', 4612', 5149', 5150', 5151', 5152' w/1 hole. 5296', 5297', 5598', 5599', 5665', 5666', 5992', 5993' w/2 holes. Total holes 36. TIH w/Howco BP Retrieving Head, 1 jt tbg, SN & 130 jts 2-3/8" tbg & 6' Blast jt, w/2-3/8" tbg @ 4117'. ND BOP - NU tree. NU Western & pumped 87 bbls 3% KCl wtr down tbg w/120 RCN ball sealers. Avg rate 5.5 BPM @ 2600 psi. Balled out @ 4100 psi. Back flowed well to release ball sealers. Opened well to pit. Released rig.

4-6-78 Flowing to pit on 2" ck w/50#.
Well Making wtr in heads. RU frac eqpt. WO sand. Wtr & tanks on location. Prep to frac w/Western on 4-7-78.

4-7-78 RU Western Co.
Fracing well as per prognosis this AM.

4-8-78 Prep to open to pit.
RU Western & fraced down 2-3/8" tbg & 4½" csg in 4 stages w/3880 bbls of gelled 2% KCl wtr (40#/1000 gal Guar) & 260,000# of 40/60 mesh sand; Used total of 48 RCN ball seales (16 ball sealers/stage); Treated last 10,000 gals of each stage w/RA snd; Avg rate 25 BPM @ 4000 psi. Max press 6000 psi w/9 BPM. ISIP 1950 psi, 10 min 1850 psi. Started job @ 7:20 AM; Finished 10:00 AM, 4-7-78. SION.

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☒ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

RECEIVED
AUG 10 1979
DIVISION OF OIL, GAS, & MINING

2. NAME OF OPERATOR: GAS PRODUCING ENTERPRISES, INC.

3. ADDRESS OF OPERATOR: P.O. BOX 749, DENVER, COLORADO 80201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 2401' FWL & 2337' FSL, Section 10, T10S, R22E
At top prod. interval reported below: Same
At total depth: Same

5. LEASE DESIGNATION AND SERIAL NO.: U-025187
6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A
7. UNIT AGREEMENT NAME: NATURAL BUTTES UNIT
8. FARM OR LEASE NAME: NATURAL BUTTES UNIT
9. WELL NO.: NATURAL BUTTES #18
10. FIELD AND POOL, OR WILDCAT: Bitter Creek Field
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Section10, T10S, R22E

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
43-047-30221	7-30-75	Uintah	Utah

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
12-28-75	2-4-76	Mesaverde - 3-11-79 Wasatch - 5-3-78	5094' Gr.	5096'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
9145'	9068'	2(Commingled)	→	0-TD	---

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
Wasatch - 4500' - 7049'
Mesaverde - 7437'-8954'

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: FDC-CNL, DIL BHC-Sonic

27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
4-1/2"	13.5#	9140' KB	7-7/8"	1600 sacks	---
8-5/8"	24.0#	2450' KB	10-3/4"	595 sacks	---
13-3/8"	54.5#	84' KB	17-1/4"	200 sacks	---

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8"	8613'	NONE

31. PERFORATION RECORD (Interval, size and number)
SEE ATTACHED

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
SEE ATTACHED	

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
Mesaverde: 3-29-76 Wasatch MV: 5-3-78	Flowing	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
MV: 3-30-76	24	16/64"	→	0	TSTM	0	---
Commingled: 5-2-79	24	12/64"	→	0	1250	25	---

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
220	0	→	0	TSTM	0	---
1250	SICP 1350	→	0	1250	25	

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): Sold

TEST WITNESSED BY: K.E. Oden

35. LIST OF ATTACHMENTS
(1) MV Completion Report; (2) Chronological of workover; (3) Original Completion Report.

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED F. R. Midkiff TITLE District Superintendent DATE August 7, 1979

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.
If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.
Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.
Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.
Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.
Item 29: *"Sacks Cement":* Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.
Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Wasatch			Various zones endountered throughout Wasatch interval - refer to logs. No cores or DST's taken
Mesaverde			Various zones endountered throughout Mesaverde interval - refer to logs. No cores or DST's taken.

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
Wasatch	4160	SAME
Mesaverde	7075	
Castlegate	8750	
Mancos	9080	

★ U.S. GOVERNMENT PRINTING OFFICE: 1974-780-680/VIII-238

ATTACHMENT 1

Perforation, Acidizing & Frac Record
Natural Buttes Unit #18
Section 10-T10S-R22E
Uintah County, Utah

Perf w/1 SPF (18 zones w/4 JS/zone) w/3-1/8" csg gun @

6490-94'	)	7437-41'	)
6644-48'	)	7727-31'	)
6667-71'	)	7351-55'	)
6697-6701'	)	7885-89'	)
6735-43'	)	7922-96'	)
6780-84'	)- WASATCH	8616-20'	)-MESAVERDE
6952-56'	)	8846-50'	)
7045-49'	)	8874-78'	)
		8901-05'	)
		8950-54'	)

Total 72 holes.

Frac w/1,380,000# 20/40 sand, 100,000# 40-60 sand, 9,000 gals 15% MSR acid, 745,270 gals MY-T-Gel II.

Perf w/3-1/8" csg gun @

4609'	5749'	)
4610'	5750'	)
4611'	5751'	)- 1 SPF
4612'	5852'	)
5296'	5665'	)
5297'	5666'	)- 2 SPF
5298'	5992'	)
5299'	5993'	)

Total 36 holes

Acidized w/87 bbls 3% KCl wtr.

Frac w/3880 bbls gelled 2% KCl wtr (40#/1000 gals guar) + 260,000# 40-60 sand.

Form 9-331
Dec. 1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☐ gas well ☒ other

2. NAME OF OPERATOR
Coastal Oil & Gas Corporation

3. ADDRESS OF OPERATOR
P. O. Box 749, Denver, CO 80201

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 2401' FWL & 2337' FSL
AT TOP PROD. INTERVAL: SAME
AT TOTAL DEPTH: SAME

5. LEASE
U-025187

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
N/A

7. UNIT AGREEMENT NAME
Natural Buttes Unit

8. FARM OR LEASE NAME
Natural Buttes

9. WELL NO.
Natural Buttes Unit #18

10. FIELD OR WILDCAT NAME
Natural Buttes Field

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Section 10-T10S-R22E

12. COUNTY OR PARISH: Uintah
13. STATE: Utah

14. API NO.
43-047-30221

15. ELEVATIONS (SHOW DF, KDB, AND WD)
5094' GR

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other) NTL-2B Unlined Pit			

Approval denied

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This application is to request approval to dispose of produced waters in an unlined pit with a bentonite seal. The subject well produces less than one BWPD. The attached water analysis gives the composition of produced waters. Water is produced from the Wasatch-Mesaverde formation. The evaporation rate for the area compensated for annual rainfall is 70 inches per year. The percolation rate is 2-6 inches per hour for the area. The pit itself is 30' x 30' at the surface, tapering down to 25' x 25', having a depth of 6-1/2 feet. See the attached map for location of well site. The pit is located at the well site.

Attachments: (1) Topo map
(2) Water analysis

The areal extent and depth of waters containing less than 10,000 ppm TDS is unknown. The cement for the 4-1/2" casing is brought back near surface which protects all surface waters.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED F. R. Midkiff TITLE Production Superintendent DATE July 29, 1980

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side.

Form C-11B (rev. 2-76)

SAMPLE NO. _____

THE WESTERN COMPANY

Service Laboratory
Midland, Texas
Phone 683-2781 Day
Phone 683-4162 Night

Service Laboratory
Oklahoma City, Oklahoma
Phone 840-2771 Day
Phone 751-5470 Night

WATER ANALYSIS

County UINTAH

Field NATURAL BUTTES

Operator CIGE

Well CIGE NATURAL BUTTES # 18

Depth

Formation WASATCH

Date Sampled 6-29-80

Date Received 6-30-80

Submitted By KARL ODEN

Worked By JOHN KOTELEC

Other Description

CHEMICAL DETERMINATIONS as parts per million

Density 1.010 @ 22° C

pH 7.5

Iron 3 ppm

Hydrogen Sulfide NONE

Sodium and Potassium 9697

Bicarbonate 976

Calcium 400

Sulfate 1460

Magnesium 122

Phosphate

Chloride 14370

as Sodium Chloride 23639

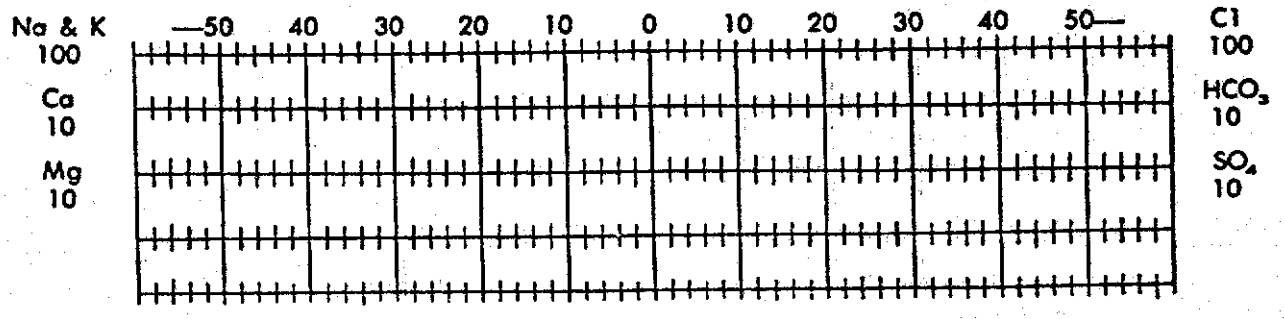
TOTAL ppm

Resistivity .28 ohm-meters @ 70° F

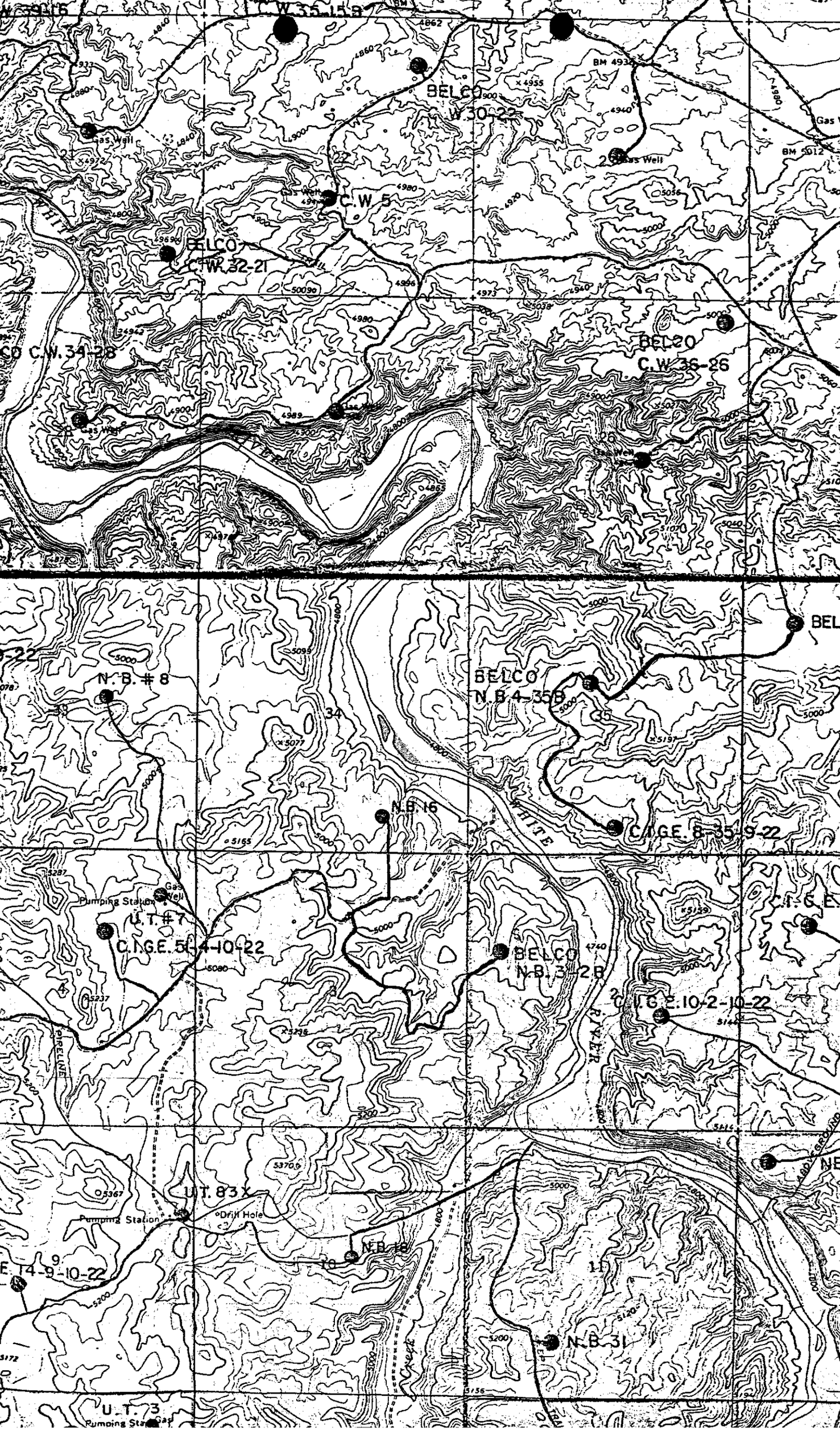
TOTAL HARDNESS - 1500 ppm as $CaCO_3$

Remarks:

for Stiff type plot (in meq./l.)



Per _____


C.W.35-15B
BELCO
C.W.30-22
Gas Well
C.W.5
BELCO
C.W.32-21
BELCO
C.W.36-26
C.W.34-28
BELCO
N.B.4-35B
N.B.#8
N.B.16
C.I.G.E.8-35-9-22
U.T.#7
C.I.G.E.5(4-10-22
BELCO
N.B.3-2B
C.I.G.E.10-2-10-22
U.T.83X
Drill Hole
N.B.18
N.B.31
U.T.3
Pumping Station
PIPELINE
WHITE
RIVER

FORM CIG 881-2/68

COLORADO INTERSTATE GAS COMPANY

ONE-POINT BACK PRESSURE TEST FOR NATURAL GAS WELLS

COMPANY:	LEASE:	WELL NUMBER:
GAS PRODUCING ENTERPRISES, INC	NATURAL BUTTES UNIT	18

FIELD:	PRODUCING FORMATION:	COUNTY
NATURAL BUTTES AREA	MESAVERDE	UINTAH COUNTY

SECTION:	TOWNSHIP:	RANGE:	PIPELINE CONNECTION:
10	10S	22E	COLORADO INTERSTATE GAS COMPANY

CASING (O.D.):	WT./FT.:	I.D.:	SET AT:	PERF.:	TO:
4.500	13.5	3.920	9140	6490	8954

TUBING (O.D.):	WT./FT.:	I.D.:	SET AT:	PERF.:	TO:
2.375	4.7	1.995	6092		

PAY FROM:	TO:	L:	G(RAW GAS):	GL:	d_e:
		6092	.605	3685.660	1.9950

PRODUCING THRU:	STATIC COLUMN:	PACKER (S) SET @:	G (SEPARATOR):	METER RUN SIZE:	ATTRIBUTABLE ACREAGE:
TUBING	YES		.605	2.067 (FLANGE)	

DATE OF FLOW TEST: 9-23-78 9-26-78

OBSERVED DATA

ORIFICE SIZE INCHES	METER DIFFERENTIAL RANGE	METER PRESSURE	DIFFERENTIAL ROOTS	FLOWING TEMPERATURE t	CASING WELLHEAD PRESSURE		TUBING WELLHEAD PRESSURE	
					p.s.i.g.	p.s.i.a.	p.s.i.g.	p.s.i.a.
1.000	100	584.0	4.60	81	1248.0	1261.0	987.0	1000.0

RATE OF FLOW CALCULATIONS

24 HOUR COEFFICIENT	METER PRESSURE p.s.i.a.	hw	$P_m h_w$	EXTENSION $\sqrt{P_m h_w}$	GRAVITY FACTOR Fg	FLOWING TEMP. FACTOR Ft	DEVIATION FACTOR Fpv	RATE OF FLOW R MCFD
5073.0	597.0	21.16	12632.520	112.394	1.286	.9804	1.0466	752.37

DATE OF SHUT-IN TEST: 9-29-78

PRESSURE CALCULATIONS

SHUT-IN PRESSURE: CASING:	TUBING:	BAR. 14.4 p.s.i.	P_c	P_c^2
1462.0 p.s.i.g.	1272.0 p.s.i.g.	13.080	1475.8 p.s.i.a.	2175625.0

P_w p.s.i.a.	P_w^2	P_r	T_r	Z
1261.0	1590121.0			

POTENTIAL CALCULATIONS

(1) $\dfrac{P_c^2 - P_a^2}{P_c^2 - P_w^2} = 3.7158$

(2) $\left[\dfrac{P_c^2 - P_a^2}{P_c^2 - P_w^2}\right]^n = 2.1383$

(3) $R\left[\dfrac{P_c^2 - P_a^2}{P_c^2 - P_w^2}\right]^n = 1609$

CALCULATED WELLHEAD OPEN FLOW	BASIS OF ALLOCATION:	SLOPE n:
1609 MCFD @ 14.65		.579 (Average)

APPROVED BY COMMISSION:	CONDUCTED BY:	CHECKED BY:

I, _____, BEING FIRST DULY SWORN ON OATH, STATE THAT I AM FAMILIAR WITH FACTS AND FIGURES SET FORTH IN THIS REPORT, AND THAT THE REPORT IS TRUE AND CORRECT.

_____ SIGNATURE AND TITLE OF AFFIANT

_____ COMPANY

SUBSCRIBED AND SWORN TO BEFORE ME THIS _____ DAY OF _____, 19 ____

MY COMMISSION EXPIRES

_____ NOTARY PUBLIC

07 01 33 (REV. 12/76)

STATE OF UTAH

EXECUTIVE DEPARTMENT

Office of Lt. Governor/Secretary of State

AMENDED CERTIFICATE OF AUTHORITY

OF

COASTAL OIL & GAS CORPORATION

I, DAVID S. MONSON, Lt. Governor/Secretary of State of the State of Utah, hereby certify that duplicate originals of an Application of

COASTAL OIL & GAS CORPORATION
GAS PRODUCING ENTERPRISES, INC. *formerly*

for an Amended Certificate of Authority

duly signed and verified pursuant to the provisions of the Utah Business Corporation Act, have been received in my office and are found to conform to law.

ACCORDINGLY, by virtue of the authority vested in me by law, I hereby issue this Amended Certificate of Authority to

COASTAL OIL & GAS CORPORATION

to transact business in this State

and attach hereto a duplicate original of the Application for such Amended Certificate.

File No. #49324

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the Great Seal of the State of Utah at Salt Lake City, this 4th *day of* April *A.D. 19*80

David S. Monson

LT. GOVERNOR/SECRETARY OF STATE

070905

Coastal Oil & Gas Corporation

946 East Hwy. 40
P.O. Box 1138
Vernal, Utah 84078
Phone (801) 789-4433

June 23, 1986

State of Utah Department of Health
Attn: Kent Montaque
Water Pollution Control
3266 State Office Building
P.O. Box 4550
Salt Lake City, Utah 84145

RE: Waste Oil Handling

Dear Mr. Montaque

Coastal Oil & Gas, Operator for the Natural Buttes Unit, Uintah County, Utah, is requesting permission to spread waste oil on lease and Uintah County roads within the unit boundries. Reasons are as listed below:

1. Unsaleable oil, virtually with no hydracarbon properties.
2. Treating of oil is impossible.
3. Uneconomical to haul to disposal, trucking and disposal charges, ie: verses royalties.
4. Oil will be spread on roads and bladed in for dust control and dust pollution.
5. There are no water wells in the unit and the spreading of oil will be kept from drainage areas.
6. Waste oil will be spread only under Coastal's close supervision.
7. Annual production on waste oil is less than sixty barrels per year.

Here are a list of the wells this project would entail:

1. CIGE 90D Section 9-T9S-R21E
2. CIGE 59 Section 21-T10S-R21E
3. CIGE 15 Section 8-T10S-R22E
4. NBU 16 Section 34-T9S-R22E
5. NBU 18 Section 10-T10S-R22E

Thank-you,

R.J. Lewis
Area Production Foreman

RJL/tj
see attachments
cc: Vince Guinn - Coastal
Paul Breshears - Coastal
file

HALLIBURTON SERVICES

DISTRICT LABORATORY
BOX 339, VERNAL, UTAH 84078

RECEIVED
JUN 30 1986
DIVISION OF
OIL, GAS & MINING

No.

LABORATORY REPORT

Bob Lewis

Date 6-25-86

CIGE

Vernal, UT

ive below results of our examination of Fluid sample from pit of well #59

itted by Bob Lewis

ed #59 from pit

The above sample contained 236 mils of oil. No other liquids were in the sample.

API Gravity = 33.8° @ 60° F.

cc: C.C. Morey
D.J. Lube
R.C. Jacquier
File (2)

Respectfully submitted,

HALLIBURTON SERVICES

By Rick Curtice
R.J. Curtice
Special Operator

Form C-11B (rev. 2-76)

SAMPLE NO. _____

RECEIVED
JUN 30 1986
DIVISION OF OIL, GAS & MINING

THE WESTERN COMPANY

Service Laboratory
Midland, Texas
Phone 683-2781 Day
Phone 683-4162 Night

Service Laboratory
Oklahoma City, Oklahoma
Phone 840-2771 Day
Phone 751-5470 Night

WATER ANALYSIS

County UINTAH — Date Sampled 6-29-80

Field — Date Received 6-30-80

Operator CIGE — Submitted By KARL ODEN

Well CIGE # 44 — Worked By JOHN KOTELEC

Depth — Other Description

Formation WASATCH

CHEMICAL DETERMINATIONS as parts per million

Density	1.005 @ 22°C	pH	7.8
Iron	2 ppm	Hydrogen Sulfide	NONE
Sodium and Potassium	1863	Bicarbonate	268
Calcium	200	Sulfate	0
Magnesium	97	Phosphate	
Chloride	3353	as Sodium Chloride	5516

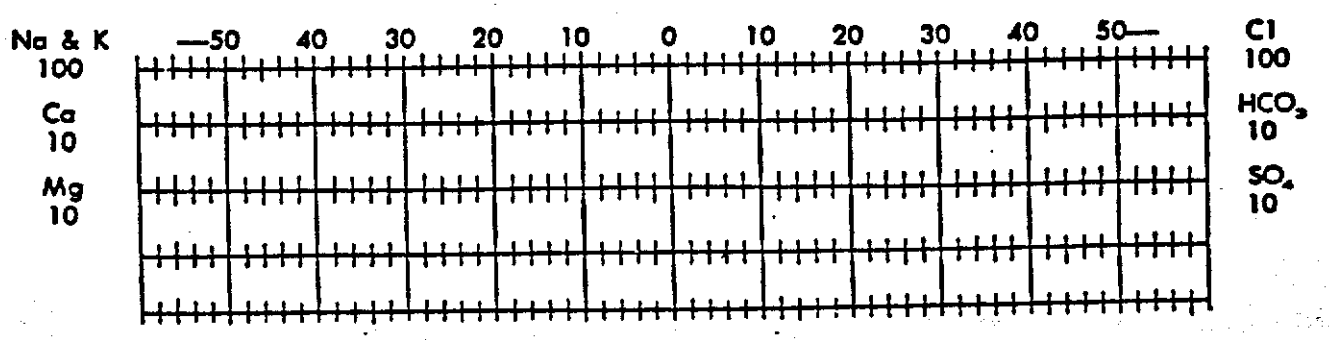
TOTAL ppm

Resistivity 1.005 ohm-meters @ 70°F

TOTAL HARDNESS - 900 ppm as $CaCO_3$

Remarks:

for Stiff type plot (in meq./l.)



Per _____

CONDITIONS OF APPROVAL

1. Only the skim oil will be removed and applied to road surfaces. The skim oil does not include the produced water. The fluids other than the skim oil will have to be hauled to an authorized disposal site.

2. The skim oil will only be used on main roadways and will not be used on individual access roads to existing locations. The reason being that if the locations are abandoned, oil on the access roads may inhibit reclamation. For that reason, we want all skim oil used on main thoroughfare.

Coastal Oil & Gas Corporation

946 East Hwy. 40
P.O. Box 1138
Vernal, Utah 84078
Phone (801) 789-4433

August 30, 1985

State of Utah Department of Health
Attn: Al Trearse
Environmental Health Engineer
Bureau of Air Quality
3266 State Office Building
P.O. Box 45500
Salt Lake City, Utah 84145-0500

Re: Disposal Pit: NBU #15
Sec. 26-T9S-R21E
Uintah County, Utah

Dear Mr. Trearse:

In regards to the telephone conversation Tuesday, August 27, 1985, involving the handling of unusable hydracarbons in the burn pit within the disposal pit complex.

It is the intent that this un-marketable fluid be skimmed off and used for dust control on the lease roads whenever feasible.

Sincerely,

R.J. Lewis
Area Production Foreman

See Attachments
cc: Vince Quinn/COG
[redacted]

STATE OF UTAH
DEPARTMENT OF HEALTH

NORMAN H. BANGERTER, GOVERNOR

SUZANNE DANDOY, M.D., M.P.H., EXECUTIVE DIRECTOR

AUG 19 1985

533-6108

RECEIVED
JUN 30 1986

DIVISION OF
OIL, GAS & MINING

Mr. R.J. Lewis
Area Production Foreman
Coastal Oil and Gas Corporation
946 East Highway 40
P.O. Box 1138
Vernal, UT 84078

RE: NOI for Produced Water Disposal Pit, Natural Butes Unit, at NBU, Section 3, T10S, R21E

Dear Mr. Lewis:

We have reviewed your notice of intent to construct a Produced Water Disposal Pit.

Section 3.1.8, Utah Air Conservation Regulations require that all new sources of air pollutions must apply best available control technology (BACT) to all emission points. The Bureau of Air Quality is concerned that open burning of any hydrocarbons collected on the Produced Water Disposal Pit may not be BACT for this source. Before the Executive Secretary can complete a review of the proposal, Coastal Oil and Gas is requested to submit the following:

1) An alternative method to open burning of hydrocarbons collected on the pit.

2) Sufficient reasons why open burning is the only feasible method for hydrocarbon removal from the pit if this is your finding.

If you have any questions concerning this matter, please contact the undersigned at 801-533-6108.

Sincerely,

A.R. Trearse
Environmental Health Engineer
Bureau of Air Quality

ART/jb

8957Q

331
73

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNDRY NOTICES AND REPORTS ON WELLS

use this form for proposals to drill or to deepen or plug back to a different
r. Use Form 9-331-C for such proposals.)

ell ☐ gas well ☐ other

AME OF OPERATOR
Coastal Oil & Gas

DDRESS OF OPERATOR
.O. Box 1138 Vernal, Utah 84078

OCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
T SURFACE: Facility Location
T TOP PROD. INTERVAL: Sec. 26-T9S-R21E
T TOTAL DEPTH:

5. LEASE
UT-10170-01

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
N/A

7. UNIT AGREEMENT NAME
Natural Buttes Unit

8. FARM OR LEASE NAME
Natural Buttes Unit

9. WELL NO.
NBU #15

10. FIELD OR WILDCAT NAME
Natural Buttes Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 26-T9S-R21E

12. COUNTY OR PARISH
Uintah

13. STATE
Utah

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
4961' UNGR GR

CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

JEST FOR APPROVAL TO:	SUBSEQUENT REPORT OF:
WATER SHUT-OFF	☐
CTURE TREAT	☐
OT OR ACIDIZE	☐
AIR WELL	☐
L OR ALTER CASING	☐
TIPLE COMPLETE	☐
NGE ZONES	☐
NDON*	☐
er) NTL-2B for central water disposal facility (amended location from original submission)	

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Prior approval was requested for a Central Water Disposal Facility for the Natural Buttes Unit under NTL-2B III, at the NBU 25 location in Sec. 3-T10S-R21E. This location was later changed thru consultation with the State of Utah and BLM to its present location at NBU #15- Sec. 26-T9S-R21E. All changes and revisions have been coordinated with the State of Utah and BLM and are outlined in the attached letter of approval from the State of Utah, Dept. of Health.

RECEIVED
JUN 30 1986
DIVISION OF
OIL, GAS & MINING

bsurface Safety Valve: Manu. and Type _____ Set @ _____

. I hereby certify that the foregoing is true and correct

NED _____ TITLE Area Prod. Foreman DATE 8-13-85

(This space for Federal or State office use)

PROVED BY _____ TITLE _____ DATE _____
NDITIONS OF APPROVAL, IF ANY:

Form 9-331
Dec. 1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☐ gas well ☒ other

2. NAME OF OPERATOR
Coastal Oil & Gas

3. ADDRESS OF OPERATOR
P.O. Box 1138 Vernal, Utah

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE:
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
U-010950A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
Natural Buttes Unit

8. FARM OR LEASE NAME

9. WELL NO.
NBU #14

10. FIELD OR WILDCAT NAME
Bitter Creek Field

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Section 22-T9S-R21E

12. COUNTY OR PARISH
Uintah

13. STATE
Utah

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
4,895' GR

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:
TEST WATER SHUT-OFF	☐	☐
FRACTURE TREAT	☐	☐
SHOOT OR ACIDIZE	☐	☐
REPAIR WELL	☐	☐
PULL OR ALTER CASING	☐	☐
MULTIPLE COMPLETE	☐	☐
CHANGE ZONES	☐	☐
ABANDON*	☐	☐
(other) Skim Pit		

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Approval is requested to skim the pit and haul to the county road and apply for dust control. This oil is not a saleable product, being a mixture of oil shale and gilsonite. The BLM offfice in Vernal will be contacted prior to movement as to the day, road and location.

RECEIVED
JUN 30 1986
DIVISION OF
OIL, GAS & MINING

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED _____ TITLE Area Foreman DATE 6-10-86

(This space for Federal or State office use)

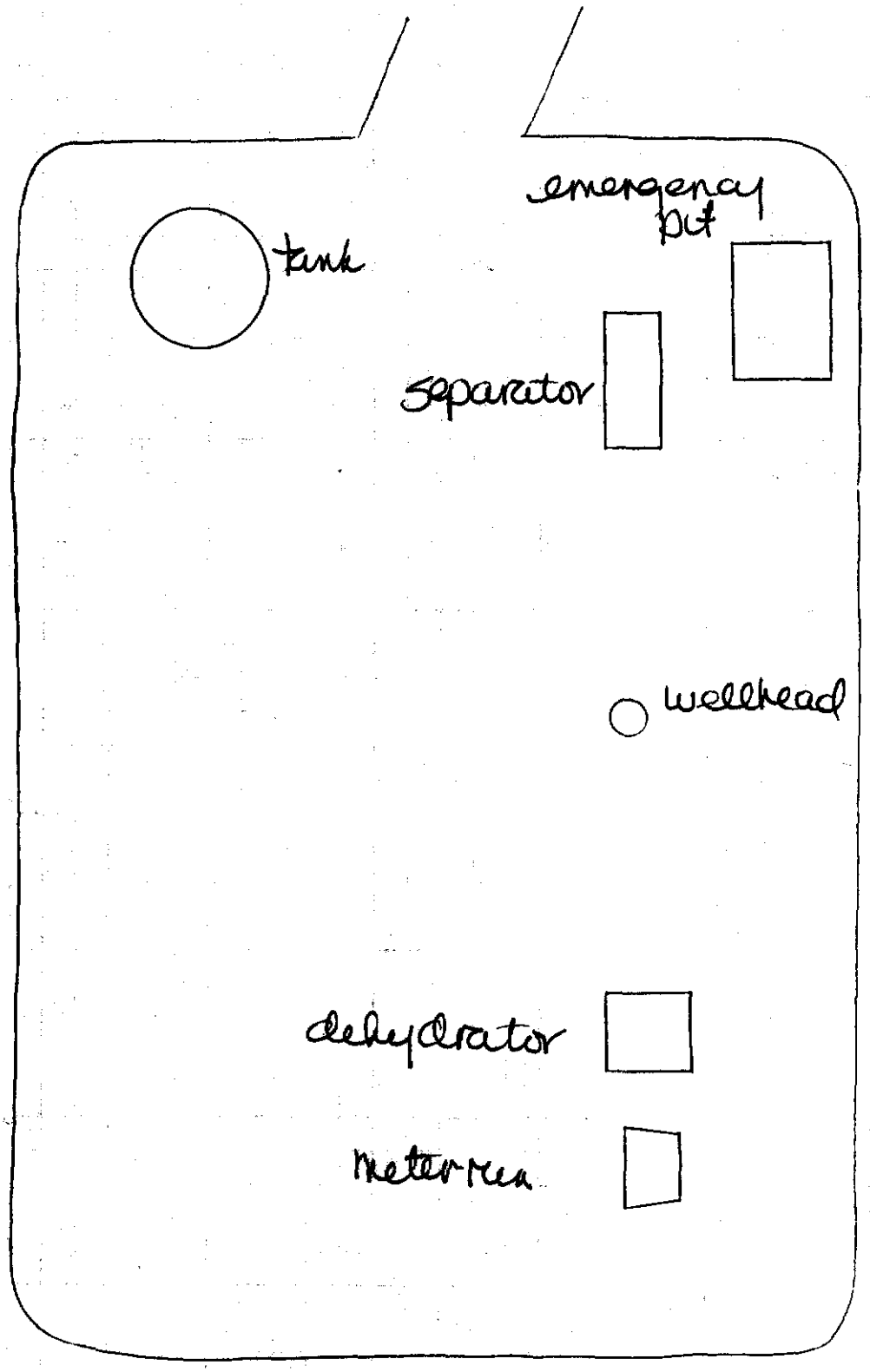
APPROVED BY _____ TITLE Area Manager DATE 06/24/86

CONDITIONS OF APPROVAL, IF ANY: "ATTACHED"

OPERATOR

CONDITIONS OF APPROVAL ATTACHED TO OPERATOR'S COPY

NBU 18 Sec 10, T10S, R22E Uintah 1/11/89



Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: U-025187

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

7. UNIT AGREEMENT NAME: Natural Buttes Unit

2. NAME OF OPERATOR: Coastal Oil & Gas Corporation

8. FARM OR LEASE NAME: Natural Buttes Unit

3. ADDRESS OF OPERATOR: P.O. Box 749, Denver, Colorado 80201-0749

9. WELL NO.: 18

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface: 2401' FWL & 2337' FSL

RECEIVED
MAY 15 1989
DIVISION OF OIL, GAS & MINING

10. FIELD AND POOL, OR WILDCAT: Natural Buttes Field

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Section 10, T10S-R22E

14. PERMIT NO.: 43-047-30221

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5094' GR

12. COUNTY OR PARISH: Uintah

13. STATE: Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Location Improvements			XX
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Coastal Oil & Gas Corporation has attached the oil dump line to the oil production tank so that the oil waste/sludge is being produced directly to the production tank. The waste/sludge is then cut with condensate for sale.

18. I hereby certify that the foregoing is true and correct

SIGNED Eileen Danni Dey TITLE Regulatory Analyst DATE May 4, 1989

Eileen Danni Dey

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Form 3160-5
June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.
U-025187

6. If Indian, Allottee or Tribe Name
N/A

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation
Natural Buttes Unit

1. Type of Well
— Oil Well X Gas Well — Other

8. Well Name and No.
NBU #18

2. Name of Operator
Coastal Oil & Gas Corporation

9. API Well No.
43-047-30221

3. Address and Telephone No.
P. O. Box 749, Denver, CO 80201-0749 (303) 573-4476

10. Field and Pool, or Exploratory Area
Natural Buttes

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
2401' FWL & 2337' FSL
Section 10-T10S-R22E

11. County or Parish, State
Uintah County, UT

CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
X Notice of Intent	— Abandonment	— Change of Plans
— Subsequent Report	— Recompletion	— New Construction
— Final Abandonment Notice	— Plugging Back	— Non-Routine Fracturing
	— Casing Repair	— Water Shut-Off
	— Altering Casing	— Conversion to Injection
	X Other NTL 2B	— Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Coastal Oil & Gas Corporation requests permission to install a 400-BBL tank for produced water on the above-referenced well. The produced water will then be hauled off location to an approved disposal pit or disposal well.

Accepted by the State of Utah Division of Oil, Gas and Mining
Date: 7/28/93
By: R. Jansa

RECEIVED
JUL 22 1993
DIVISION OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Signed [signature] Title Regulatory Analyst Date 7/20/93-mar

(This space for Federal or State office use)
Approved by Federal Approval of this Action is Necessary Title — Date —
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
FEB - 2 1995
DIV OF OIL, GAS & MINING

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT" – for such proposals.

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: U-025187
6. If Indian, Alottee or Tribe Name: N/A
7. If Unit or CA, Agreement Designation: Natural Buttes Unit

1. Type of Well: [ ] Oil Well [X] Gas Well [ ] Other
8. Well Name and No.: NBU #18
2. Name of Operator: Coastal Oil & Gas Corporation
9. API Well No.: 43-047-30221
3. Address and Telephone No.: P. O. Box 749, Denver, CO 80201-0749 (303) 573-4476
10. Field and Pool, Or Exploratory Area: Natural Buttes
4. Location of Well (Footage, Sec., T., R., M., Or Survey Description): 2401' FWL & 2337' FSL, Section 10-T10S-R22E
11. County or Parish, State: Uintah County, UT

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other Install Siphon String	[ ] Dispose Water

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and tru vertical depths for all markets and zones pertinent to this work.)*

On 4/15/94 the following work was performed to install siphon string: MIRU Cudd Press. Cont. RIH w/1-1/4" coiled tbg to 5900'. RDMO Cudd.

14. I hereby certify that the foregoing is true and correct

Signed N.O. Shiflett Title District Drilling Manager Date 01/31/95

(This space for Federal or State office use)

APPROVED BY _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, ficticious or fraudulent statements or representations as to any matter within its jurisdiction.

***See Instruction on Reverse Side**

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT" - for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: U-025187
6. If Indian, Alottee or Tribe Name: N/A
7. If Unit or CA, Agreement Designation: Natural Buttes Unit
8. Well Name and No.: NBU #18
9. API Well No.: 43-047-30221
10. Field and Pool, Or Exploratory Area: Natural Buttes
11. County or Parish, State: Uintah County, UT

1. Type of Well: [ ] Oil Well [X] Gas Well [ ] Other
2. Name of Operator: Coastal Oil & Gas Corporation
3. Address and Telephone No.: P. O. Box 749, Denver, CO 80201-0749 (303) 573-4476
4. Location of Well (Footage, Sec., T., R., M., Or Survey Description): 2401' FWL & 2337' FSL, Section 10-T10S-R22E

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
	[ ] Recompletion	[ ] New Construction
[X] Subsequent Report	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
[ ] Final Abandonment Notice	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other Install Siphon String	[ ] Dispose Water

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and tru vertical depths for all markets and zones pertinent to this work.)*

On 4/15/94 the following work was performed to install siphon string: MIRU Cudd Press. Cont. RIH w/1-1/4" coiled tbg to 5900'. RDMO Cudd.

RECEIVED
FEB - 9 1995
DIV OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct

Signed N. Bartlett Title District Drilling Manager Date 01/31/95

(This space for Federal or State office use)

APPROVED BY _____ Title _____ Date 2/3/95
Conditions of approval, if any: Fax Credit

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, ficticious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT" - for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: U-025187
6. If Indian, Alottee or Tribe Name: N/A
7. If Unit or CA, Agreement Designation: Natural Buttes Unit
1. Type of Well: [ ] Oil Well [X] Gas Well [ ] Other
8. Well Name and No.: NBU #18
2. Name of Operator: Coastal Oil & Gas Corporation
9. API Well No.: 43-047-30221
3. Address and Telephone No.: P. O. Box 749, Denver, CO 80201-0749 (303) 573-4476
10. Field and Pool, Or Exploratory Area: Natural Buttes
4. Location of Well (Footage, Sec., T., R., M., Or Survey Description): 2401' FWL & 2337' FSL, Section 10-T10S-R22E
11. County or Parish, State: Uintah County, UT

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[X] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[ ] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other Remove Siphon String, CO, Lwr Tbg & Install PLE	[ ] Dispose Water

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and tru vertical depths for all markets and zones pertinent to this work.)*

Please see the attached procedure for work to be performed on the subject well.

RECEIVED
DEC 24 1996
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct

Signed Sheila Bremer Sheila Bremer Title Environmental & Safety Analyst Date 12/23/96

(This space for Federal or State office use)

APPROVED BY _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, ficticious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

NBU 18-10-10-22
NATURAL BUTTES FIELD
SECTION 10 T10S R22E

WELL DATA

LOCATION:	2337' FSL 2401' FWL SEC. 10 T10S R22E	
ELEVATION:	5094' GR., 5108' KB.	
TD:	9145', PBTD 9068' (9/76)	
CSG:	8-5/8", 24.0#, K-55	@ 2450' W/ 200 SX.
	4-1/2", 13.5#, N-80	@ 9140' W/ 1600 SX.
TBG:	2 3/8", 4.7#, J-55	@ 8613' (1978)
	COIL TBG	@ 5900' (1994)
FORMATION(S):	WASATCH 4326' - 5993', 36 HOLES (1978)	
	MESAVERDE 6490' - 8952', 72 HOLES (1976)	

PROCEDURE

1. MI & RU Coil tubing unit. Kill 1-1/4" tbg w/ 3% KCL water. POOH & spool 1-1/4" CT. RD CTU.

2. MI & RU pulling unit. Blow down & kill well. ND WH. NU BOP. POOH w/ 2-3/8" tbg. NOTE: **2-3/8" tbg plugged somewhere below 6000'**.

3. RIH w/ 2 3/8" tbg w/ mill & csg scraper. Clean out to PBTD @ 9068'(BP @ 8954'). TOOH w/ mill & csg scraper. TIH w/ 2-3/8" tbg & land tbg @ 8954'.

4. ND BOP. NU WH. RD & MO pulling unit.

5. Install PLE. Swab / flow well to clean up. Return the well to sales.

NBU 18-10-10-22
NATURAL BUTTES FIELD
SECTION 10 T10S R22E

WELL DATA

LOCATION:	2337' FSL 2401' FWL SEC. 10 T10S R22E	
ELEVATION:	5094' GR., 5108' KB.	
TD:	9145', PBTD 9068' (9/76)	
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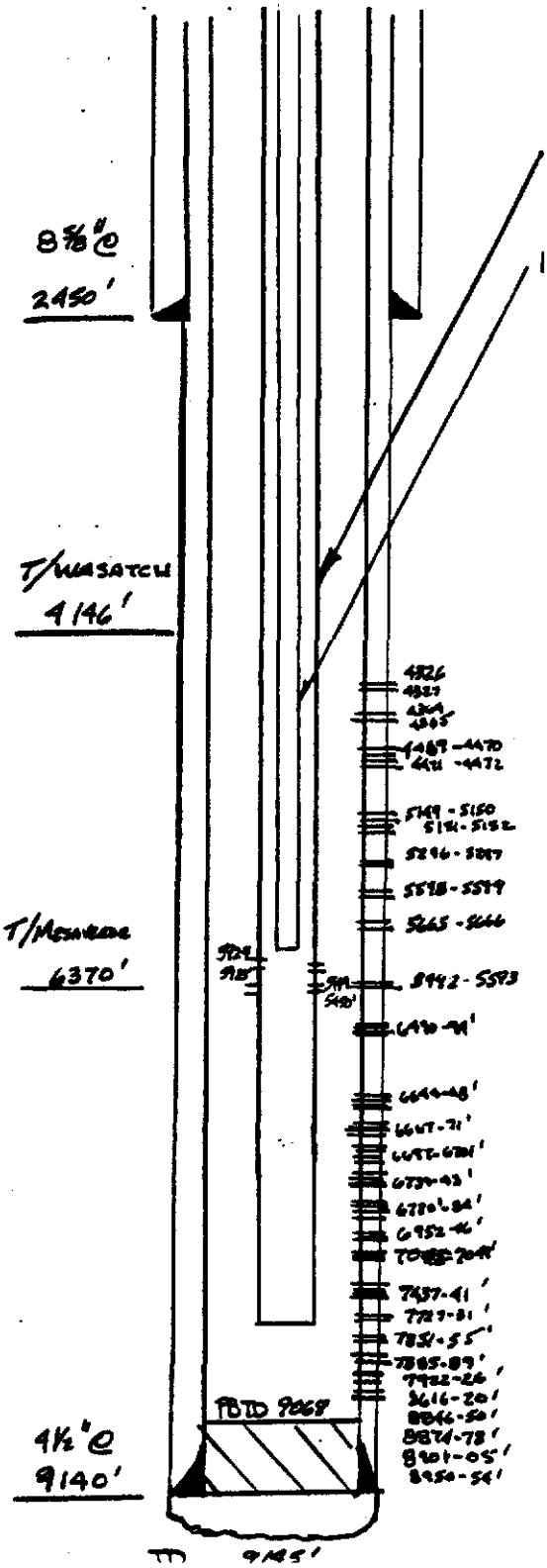
	4-1/2", 13.5#, N-80	@ 9140' W/ 1600 SX.
TBG:	2 3/8", 4.7#, J-55	@ 8613' (1978)
	COIL TBG	@ 5900' (1994)
FORMATION(S):	WASATCH 4326' - 5993', 36 HOLES (1978)	
	MESAVERDE 6490' - 8952', 72 HOLES (1976)	



(4/94) Ran 1¼" coil tbg to 5900'.

(1/94) Ran in hole w/ tbg punch. couldn't get below 5950'. Perf 5924-5925 (4-½" holes)

(5/84) Ran gauge ring to 6000'. Perf tbg @ 5949'-5950'

(4/78) Recompl. Wasatch (4326'-5993') 9 sands 36 holes

Perf 3⅛" csg: 4326 (4), 4327 (2), 4364 (4), 4365 (2), 4469 (2), 4470 (2), 4471 (2), 4472 (2), 4609 (2), 4610 (2), 4611 (2), 4612 (2), 5149 (2), 5150 (2), 5151 (2), 5152 (2), 5296 (2), 5297 (2), 5515 (2), 5991 (2), 5992 (2), 5993 (2), 5665 (2), 5666 (2)

FRAC w/ 200,000# Sand + 263,000 gal gel commingled

IPF (5/78) 1250 MCFPD 13/64" ck FTP 1250# CP 1350#

(9/76) MESAVERDE (6490'-8952') 18 sands 72 holes

Perf (1 JSPF) 3⅛" csg

6490-94, 6644-48, 6667-71, 6697-81, 6739-43, 6780-84, 6952-56, 7045-49, 7487-41, 7727-31, 7851-55, 7885-89, 7922-26, 8616-20, 8846-50, 8874-78, 8901-05, 8950-54

FRAC'd w/ 1,480,000# sand + 695,000 gal gel (5 stages)

IPF (1/77) 1326 MCF 18/64" ck 780# FTP 1300# CP

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT" - for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: U-025187
6. If Indian, Alottee or Tribe Name: N/A
7. If Unit or CA, Agreement Designation: Natural Buttes Unit
8. Well Name and No.: NBU #18
9. API Well No.: 43-047-30221
10. Field and Pool, Or Exploratory Area: Natural Buttes
11. County or Parish, State: Uintah County, UT

1. Type of Well: [ ] Oil Well [X] Gas Well [ ] Other
2. Name of Operator: Coastal Oil & Gas Corporation
3. Address and Telephone No.: P. O. Box 749, Denver, CO 80201-0749 (303) 573-4476
4. Location of Well (Footage, Sec., T., R., M., Or Survey Description): 2401' FWL & 2337' FSL, Section 10-T10S-R22E

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other Remove Siphon String, CO, LWR Tbg & Install PLE	[ ] Dispose Water

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and tru vertical depths for all markets and zones pertinent to this work.)*

Please see the attached chronological history for work performed on the subject well.

RECEIVED
JUN 23 1997
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct

Signed Bonnie Carson Title Senior Environmental Analyst Date 06/18/97

(This space for Federal or State office use)

APPROVED BY _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, ficticious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

THE COASTAL CORPORATION
PRODUCTION REPORT

CHRONOLOGICAL HISTORY

NBU #18
Natural Buttes Field
Uintah County, Utah
TD: 9145', Csg: 4½ @ 6999'
Perfs: 4326'-8952'

Remove CT; Lower Tubing and Install PLE

05/09/97 **Well on Production.** MIRU Camco Coil Tubing. Install window, kill tbg - POH ¼" tbg & put on spool in Camco yard. Rec 5900' tbg.
DC: $7,620 TC: $7,620

Change Tubing; Clean Out; Lower Tubing and Install PLE

06/13/97 MIRU Colorado Well Service Rig #70 and air-foam unit. Blow down tbg & csg. Pmp 20 bbls KCl down tbg. ND Tree. NU BOP. PU on tbg, stuck. PU lubricator and sinker bar. Tag fill @ 5818'. Pmp dn csg, 2 BPM, 800 psi. Pmpd in to top perf, no circ. Re-land tbg, no change in tbg. Talley and ND BOP. NU WH. Est'd free point 4200'. TLTR 90 BW (40 dn tbg, 50 dn csg)
DC: $6,193 TC: $6,193

06/14/97 **Well on production.** ITP 850 psi, CP 0 psi. Blow well to tank, unload well 20 bbls. RDMO. Put on production @ 10:30 AM, 06/12/97. WO new procedure. Tubing stuck. Rec 20 BW, return to production, 70 BLLTR. Evaluate future workover. **Final Report**
DC: $350 TC: $6,543

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

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SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: U-025187
6. If Indian, Allottee or Tribe Name: N/A
7. If Unit or CA, Agreement Designation: Natural Buttes Unit

1. Type of Well: [ ] Oil Well [X] Gas Well [ ] Other
8. Well Name and No.: NBU #18
2. Name of Operator: Coastal Oil & Gas Corporation
9. API Well No.: 43-047-30221
3. Address and Telephone No.: P.O. Box 749, Denver, CO 80201-0749 (303) 573-4476
10. Field and Pool, or exploratory Area: Natural Buttes
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 2401' FWL & 2337' FSL Section 10-T10S-R22E
11. County or Parish, State: Uintah Utah

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	[ ] Altering Casing	[ ] Conversion to Injection
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(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

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Please see the attached chronological history for work performed on the subject well.

RECEIVED
AUG 06 1997
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Signed Bonnie Carson Title Senior Environmental Analyst Date August 1, 1997

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

WO tax credit 8/98

* See Instruction on Reverse Side

THE COASTAL CORPORATION
PRODUCTION REPORT

CHRONOLOGICAL HISTORY

NBU #18
Natural Buttes Field
Uintah County, Utah
TD: 9145', Csg: 4½ @ 6999'
Perfs: 4326'-8952'

1/28/94 MI & RU Cutters WLS. RIH w/tbg, punch could not get below 5950'. Perf tbg 5924 - 5925', 2 SPF (4-1/4" holes). RD & MO Cutters.
DC: $3,100 TC: $3,100

4/15/94 **PO: Prep to return to prod.** MIRU Cudd Press. Cont. RIH w/1-1/4" coiled tbg to 5900'. RDMO Cudd.
DC: $16,760 TC: $16,760

Remove CT - Lower Tubing and Install PBR

05/09/97 **Well on Production.** MIRU Camco Coil Tubing. Install window, kill tbg - POH ¼" tbg & put on spool in Camco yard. Rec 5900' tbg.
DC: $7,620 TC: $7,620

Change Tubing - Clean Out - Lower Tubing and Install PBR

06/13/97 MIRU Colorado Well Service Rig #70 and air-foam unit. Blow down tbg & csg. Pmp 20 bbls KCl down tbg. ND Tree. NU BOP. PU on tbg, stuck. PU lubricator and sinker bar. w/no-go. Tag fill @ 5818'. Pmp dn csg, 2 BPM, 800 psi. Pmpd in to top perf, no circ. Re-land tbg, no change in tbg talley. ND BOP, NU WH. Est'd free point 4200'. TLTR 90 BW (40 dn tbg, 50 dn csg)
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DC: $350 TC: $6,543

43-047-30221

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

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Use "APPLICATION FOR PERMIT" - for such proposals

SUBMIT IN TRIPLICATE

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NOV 03 1997
DIV. OF OIL, GAS & MINING

5. Lease Designation and Serial No.
See attached spreadsheet

6. If Indian, Alottee or Tribe Name
See attached spreadsheet

7. If Unit or CA, Agreement Designation
Natural Buttes Unit

1. Type of Well
[ ] Oil Well [X] Gas Well [ ] Other

8. Well Name and No.
See attached spreadsheet

2. Name of Operator
Coastal Oil & Gas Corporation

9. API Well No.
See attached spreadsheet

3. Address and Telephone No.
P. O. Box 749, Denver, CO 80201-0749 (303) 573-4476

10. Field and Pool, Or Exploratory Area
Natural Buttes

4. Location of Well (Footage, Sec., T., R., M., Or Survey Description)
See attached spreadsheet

11. County or Parish, State
Uintah County, Utah

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[ ] Other	[X] Dispose Water

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markets and zones pertinent to this work.)*

The Operator requests approval to empty produced water into tanks on the listed locations. The produced water will then be transported by truck to the underground injection well NBU #159, located at NE/SW Section 35, T9S-R21E, for disposal. Furthermore, the Operator requests approval for the presence of small unlined pits, approximate dimensions of 7' x 7' x 4' deep, to be located immediately adjacent to the stock tanks on the listed locations. The small pits may be necessary to drain off water from the stock tanks at the time of condensate sales. The water will be emptied from the small pit and trucked to the NBU #159 disposal well. The volume of water to be disposed of at each facility will not exceed an average of 5 barrels per day on a monthly basis, in conformance with the requirements of Onshore Order #7.

The listed locations include all wells listed in a Request to Dispose Water sundry dated 10/11/96, as well as all wells drilled to date in the Operator's 1997 drilling program in the Natural Buttes field.

Accepted by the State of Utah Division of Oil, Gas and Mining
Date: 12-1-97
By:

303-573-3077

14. I hereby certify that the foregoing is true and correct
Signed Bonnie Carson Title Senior Environmental Analyst Date 10/28/97
Bonnie Carson

(This space for Federal or State office use)

APPROVED BY _____ Title _____ Date _____
Conditions of approval, if any:

Must meet all applicable guidelines

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, ficticious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Well Name & No.	API No.	Lease Designation & Serial Number	If Indian, Allottee or Tribe Name	Footages	Qtr/Qtr	Section	Township	Range	Field	County
CIGE #105D-1-10-22E	43-047-31758	U-011336	N/A	842' FNL & 2095' FWL	NENW	1	10	22	Natural Buttes	Uintah
CIGE #114-34-9-21	43-047-31915	ST U-01194-A	N/A	1931' FSL & 535' FEL	NESE	34	9	21	Natural Buttes	Uintah
CIGE #118-35-9-22	43-047-32025	U-010954-A	N/A	2116' FSL & 615' FEL	NESE	35	9	22	Natural Buttes	Uintah
CIGE #124-9-9-21	43-047-32045	U-01188	Ute Tribe Surface	1854' FSL & 1819' FEL	NWSE	9	9	21	Natural Buttes	Uintah
CIGE #129-18-9-21	43-047-32043	U-0581	Ute Tribe Surface	928' FNL & 1837' FWL	NENW	18	9	21	Natural Buttes	Uintah
CIGE #130-19-9-21	43-047-32030	U-0581	Ute Tribe Surface	772' FNL & 714' FEL	NENE	19	9	21	Natural Buttes	Uintah
CIGE #140-16-10-21	43-047-31977	ST ML-10755	N/A	380' FNL & 591' FEL	NENE	16	10	21	Natural Buttes	Uintah
CIGE #144-2-10-22	43-047-32022	ST ML-22651	N/A	1501' FNL & 1719' FEL	SWNE	2	10	22	Natural Buttes	Uintah
CIGE #149-8-10-21	43-047-32056	U-01791	N/A	833' FNL & 2011' FEL	NWNE	8	10	21	Natural Buttes	Uintah
CIGE #161-2-10-22	43-047-32168	ST ML-22651	N/A	297' FSL & 1033' FEL	SESE	2	10	22	Natural Buttes	Uintah
CIGE #164-34-9-22	43-047-32353	U-0149077	N/A	660' FNL & 1739' FWL	NENW	34	9	22	Natural Buttes	Uintah
CIGE #178-5-10-22	43-047-32330	U-01195	N/A	926' FWL & 685' FNL	NWNW	5	10	22	Natural Buttes	Uintah
CIGE #180-16-9-21	43-047-32478	ST ML-3141	N/A	333' FSL & 2557' FWL	SESW	16	9	21	Natural Buttes	Uintah
CIGE #183-20-9-21	43-047-32656	U-0575	Ute Tribe Surface	1725' FSL & 2386' FEL	SWSE	20	9	21	Natural Buttes	Uintah
CIGE #187-13-10-20	43-047-32607	U-4485	N/A	900' FNL & 2200' FWL	NENW	13	10	20	Natural Buttes	Uintah
CIGE #189-29-9-22	43-047-32813	USA U-462	N/A	1574' FNL & 720' FWL	SWNW	29	9	22	Natural Buttes	Uintah
CIGE #194-1-10-22	43-047-32932	USA U-011336	N/A	2017' FNL & 61' FWL	SWNW	1	10	22	Natural Buttes	Uintah
CIGE #197-7-9-21	43-07-32798	U-0149747	N/A	854' FNL & 2178' FEL	NWNE	7	9	21	Natural Buttes	Uintah
CIGE #198-9-9-21	43-047-32799	U-01188	Ute Tribe Surface	2502' FSL & 772' FEL	NESE	9	9	21	Natural Buttes	Uintah
CIGE #199-14-9-21	43-047-32801	U-01193	Ute Tribe Surface	959' FNL & 1760' FWL	NENW	14	9	21	Natural Buttes	Uintah
CIGE #200-16-9-21	43-047-32802	U-38409	Ute Tribe Surface	1950' FNL & 2500' FWL	SENW	16	9	21	Natural Buttes	Uintah
CIGE #201-18-9-21	43-047-32804	U-0575	Ute Tribe Surface	1814' FNL & 944' FEL	SENE	18	9	21	Natural Buttes	Uintah
CIGE #202-21-9-21	43-047-32805	U-0575	Ute Tribe Surface	785' FSL & 471' FEL	SESE	21	9	21	Natural Buttes	Uintah
CIGE #204-35-9-21	43-047-32794	ML-22582	N/A	2055' FNL & 1604' FEL	SWNE	35	9	21	Natural Buttes	Uintah
CIGE #205-1-10-21	43-047-32795	ML-23612	N/A	2110' FNL & 2607' FEL	SWNE	1	10	21	Natural Buttes	Uintah
CIGE #221-36-9-22	43-047-32868	ML-22650	N/A	550' FSL & 514' FEL	NESW	13	9	21	Natural Buttes	Uintah
CIGE #235-25-9-21	43-047-32858	U-01194-ST	N/A	1900' FSL & 1800' FEL	NWSE	25	9	21	Natural Buttes	Uintah
CIGE #236-34-9-21	43-047-32861	U-01194-A-ST	N/A	428' FSL & 882' FEL	SESE	34	9	21	Natural Buttes	Uintah
CIGE #23-7-10-22	43-047-30333	ST ML-23609	N/A	1573' FNL & 1024' FEL	SENE	7	10	22	Natural Buttes	Uintah
CIGE #25-34-9-22	43-047-30737	U-0149077	N/A	2037' FNL & 1608' FWL	SENW	34	9	22	Natural Buttes	Uintah
CIGE #3-32-9-22	43-047-30320	ST ML-22649	N/A	2270' FNL & 900' FEL	SENE	32	9	22	Natural Buttes	Uintah
CIGE #43-14-10-22	43-047-30491	U-01197-A-ST	N/A	1437' FWL & 1416' FNL	NW	14	10	22	Natural Buttes	Uintah
CIGE #59-21-10-21	43-047-30548	U-02278	N/A	809' FSL & 1081' FWL	SWSW	21	10	21	Natural Buttes	Uintah
CIGE #6-19-9-21 (GR)	43-047-30356	U-0581	N/A	1122' FSL & 1542' FEL	SWSE	19	9	21	Natural Buttes	Uintah
CIGE #63D-29-9-22P	43-047-30949	U-462	N/A	521' FNL & 977' FWL	NWNW	29	9	22	Natural Buttes	Uintah
CIGE #9-36-9-22	43-047-30419	ST ML-22650	N/A	2090' FSL & 1852' FEL	NWSE	36	9	22	Natural Buttes	Uintah
CIGE #97D-31-9-22	43-047-31729	U-01530-A-ST	N/A	548' FSL & 907' FEL	SESE	31	9	22	Natural Buttes	Uintah
Morgan State #10-36	43-047-32816	ML-22265	N/A	1794' FNL & 649' FEL	SENE	36	9	21	Natural Buttes	Uintah
Morgan State #11-36	43-047-32813	ML-22265	N/A	1943' FSL & 1843' FEL	NESW	36	9	21	Natural Buttes	Uintah
Morgan State #12-36	43-047-32814	ML-22265	N/A	1992' FSL & 722' FEL	NESE	36	9	21	Natural Buttes	Uintah
Morgan State #13-36	43-047-32817	ML-22265	N/A	540' FSL & 815' FEL	SESE	36	9	21	Natural Buttes	Uintah
Morgan State #2-36	43-047-32585	ST ML-22265	N/A	900' FNL & 804' FWL	NWNW	36	9	21	Natural Buttes	Uintah
Morgan State #4-36	43-047-32729	ST ML-22265	N/A	1912' FSL & 649' FWL	NWSW	36	9	21	Natural Buttes	Uintah
Morgan State #5-36	43-047-32735	ST ML-22265	N/A	2100' FSL & 1800' FEL	NWSE	36	9	21	Natural Buttes	Uintah
Morgan State #8-36	43-047-32812	ML-22265	N/A	650' FNL & 690' FEL	NENE	36	9	21	Natural Buttes	Uintah
Morgan State #9-36	43-047-32815	ML-22265	N/A	1894' FNL & 1978' FEL	SWNE	36	9	21	Natural Buttes	Uintah
NBU #105	43-047-32302	U-0575	N/A	1026' FSL & 1011' FWL	SWSW	17	9	21	Natural Buttes	Uintah
NBU #113	43-047-31931	U-0149077	N/A	580 FSL & 854' FEL	SESE	34	9	22	Natural Buttes	Uintah
NBU #118	43-047-31969	U-5077-B	Ute Tribe Surface	1700' FNL & 660' FEL	SENE	22	9	20	Natural Buttes	Uintah
NBU #12	43-047-30119	U-461	N/A	1563' FSL & 2328' FEL	NWSE	18	9	22	Natural Buttes	Uintah

NBU #121	43-047-32086	UTU-01193	Ute Tribe Surface	819' FNL & 2163' FEL	NWNE	13	9	21	Natural Buttes	Uintah
NBU #123	43-047-31974	U-01188	N/A	827' FNL & 916' FWL	NWNW	15	9	21	Natural Buttes	Uintah
NBU #131	43-047-31966	U-0149075	Ute Tribe Surface	1699' FSL & 800' FWL	NWSW	23	9	21	Natural Buttes	Uintah
NBU #134	43-047-32011	U-0576	N/A	138' FSL & 836' FWL	SWSW	28	9	21	Natural Buttes	Uintah
NBU #140	43-047-31947	U-01191-A	N/A	1031' FNL & 1879' FEL	NWNE	5	10	22	Natural Buttes	Uintah
NBU #148	43-047-31983	U-01191	N/A	279' FSL & 2127' FWL	SESW	4	10	22	Natural Buttes	Uintah
NBU #150	43-047-31992	U-01196-B	N/A	2042' FNL & 2002' FWL	SENW	9	10	22	Natural Buttes	Uintah
NBU #152	43-047-31990	U-01196-D	N/A	815' FSL & 754' FEL	SESE	9	10	22	Natural Buttes	Uintah
NBU #153	43-047-31975	ST U-01197-A	N/A	2500' FNL & 974' FWL	SWNW	11	10	22	Natural Buttes	Uintah
NBU #18	43-047-30221	U-025187	N/A	2401' FWL & 2337' FSL	SWNE	10	10	22	Natural Buttes	Uintah
NBU #180	43-047-32113	U-025187	N/A	843' FSL & 2075' FEL	SWSE	10	10	22	Natural Buttes	Uintah
NBU #182	43-047-32162	U-0141315	N/A	1809' FNL & 1519' FWL	SENW	11	9	21	Natural Buttes	Uintah
NBU #185	43-047-32171	U-01191-A	N/A	2132' FNL & 2126' FEL	SWNE	3	10	22	Natural Buttes	Uintah
NBU #187	43-047-32230	U-0149077	N/A	1057' FSL & 2321' FWL	SESW	34	9	22	Natural Buttes	Uintah
NBU #188	43-047-32234	U-01196-C	N/A	699' FWL & 1248' FSL	SWSW	10	10	22	Natural Buttes	Uintah
NBU #189	43-047-32236	U-0149075	Ute Tribe Surface	1551' FWL & 1064' FSL	SESW	23	9	21	Natural Buttes	Uintah
NBU #198	43-047-32357	U-010950-A	N/A	2041' FEL & 2107' FSL	NWSE	22	9	21	Natural Buttes	Uintah
NBU #201	43-047-32364	U-0149767	Ute Tribe Surface	2310' FNL & 500' FWL	SWNW	9	9	21	Natural Buttes	Uintah
NBU #206	43-047-32341	U-01196-C	N/A	2209' FNL & 303' FWL	SWNW	10	10	22	Natural Buttes	Uintah
NBU #207	43-047-32329	ST U-01197	N/A	912' FNL & 1685' FWL	NENW	10	10	22	Natural Buttes	Uintah
NBU #208	43-047-32343	U-01191	N/A	790' FSL & 569' FEL	SESE	4	10	22	Natural Buttes	Uintah
NBU #210	43-047-32340	U-01196-C	N/A	1956' FSL & 2060' FWL	NESW	10	10	22	Natural Buttes	Uintah
NBU #216	43-047-32487	U-010950-A	Ute Tribe Surface	1875' FSL & 1665' FWL	NESW	15	9	21	Natural Buttes	Uintah
NBU #223	43-047-32517	U-01194-ST	N/A	514' FNL & 2174' FWL	NENW	26	9	21	Natural Buttes	Uintah
NBU #228	43-047-32636	U-0575	Ute Tribe Surface	660' FSL & 1843' FEL	SWSE	17	9	21	Natural Buttes	Uintah
NBU #229	43-47-32594	U-01191-A	N/A	1019' FNL & 1712' FEL	NWNE	3	10	22	Natural Buttes	Uintah
NBU #230A	43-047-32908	U-01191-A	N/A	1849' FNL & 677' FEL	SENE	3	10	22	Natural Buttes	Uintah
NBU #231	43-047-32561	U-01191-A-ST	N/A	966' FNL & 1539' FEL	NWNE	10	10	22	Natural Buttes	Uintah
NBU #252	43-047-32800	U-0141315	Ute Tribal Surface	641' FNL & 1845' FWL	NENW	10	9	21	Natural Buttes	Uintah
NBU #254	43-047-32803	U-0575	Ute Tribal Surface	1840' FNL & 2014' FWL	NESW	17	9	21	Natural Buttes	Uintah
NBU #255	43-047-32806	U-0575	Ute Tribal Surface	642' FSL & 1235' FWL	SESW	21	9	21	Natural Buttes	Uintah
NBU #256	43-047-32807	U-0147566	Ute Tribal Surface	2213' FNL & 2312' FWL	SENW	22	9	21	Natural Buttes	Uintah
NBU #257	43-047-32790	ST U-01194	N/A	1756' FNL & 2150' FWL	SENW	25	9	21	Natural Buttes	Uintah
NBU #258	43-047-32791	ST U-01194	N/A	1880' FNL & 211' FEL	SENE	26	9	21	Natural Buttes	Uintah
NBU #259	43-047-32792	ST U-01194	N/A	2300' FNL & 1850' FEL	SWNE	26	9	21	Natural Buttes	Uintah
NBU #263	43-047-32793	ST U-01194-A	N/A	1641' FNL & 1832' FWL	SENW	34	9	21	Natural Buttes	Uintah
NBU #265	43-047-32796	ML-13826	N/A	1953' FSL & 632' FEL	NESE	2	10	21	Natural Buttes	Uintah
NBU #270	43-047-32862	ML-23608	N/A	1963' FNL & 801' FWL	SWNW	13	10	21	Natural Buttes	Uintah
NBU #280	43-047-32865	ML-32935-A	N/A	2596' FSL & 1459' FWL	NESW	31	9	22	Natural Buttes	Uintah
NBU #289	43-047-32910	U-01191	N/A	463' FSL & 2023' FWL	SESW	3	10	22	Natural Buttes	Uintah
NBU #291	43-047-32911	U-1196-D	N/A	457' FNL & 570' FEL	NENE	9	10	22	Natural Buttes	Uintah
NBU #38N2	43-047-30536	U-08512-ST	N/A	1752' FWL & 1768' FSL	CSW	13	10	22	Natural Buttes	Uintah
NBU #80V	43-047-31240	U-0149077	N/A	2042' FSL & 984' FWL	NWSW	34	9	22	Natural Buttes	Uintah
NBU #86J	43-047-31251	U-01191-A	N/A	492' FNL & 722' FEL	NENE	3	10	22	Natural Buttes	Uintah

Form 3160-5
(August 1999)

TED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0135
Expires: November 30, 2000

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side

5. Lease Serial No.
U-025187

6. If Indian, Allottee or Tribe Name
N/A

7. If Unit or CA/Agreement, Name and/or
Natural Buttes Unit

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
NBU #18

2. Name of Operator
UTastal Oil & Gas UTrporation

9. API Well No.
43-047-30221

3a. Address
P.O. Box 1148, Vernal UT 84078

3b. Phone No. (*include area code*)
(303) 573-4476

10. Field and Pool, or Exploratory Area
Natural Buttes

4. Location of Well (*Footage, Sec., T., R., M., or Survey Description*)
2401' FWL & 2337' FSL
Section 10-T10S-R22E

11. County or Parish, State
Uintah Utah

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Acidize
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereo If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zone Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 day following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed onc testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator ha determined that the final site is ready for final inspection.)

Coastal Oil & Gas Corporation requests authorization to Acidize the Mesaverde and the Wasatch. Stuck tubing has caused the production to become erratic. Freeing the stuck tubing will result in increased production & minimize operational problems.

Please refer to attached Clean out and Acid Treatment Procedure.

COPY SENT TO OPERATOR
Date: 12-3-99
Initials: CHD

RECEIVED
NOV 26 1999
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Name (*Printed/Typed*)
Katy Dow

Title
Environmental Jr. Analyst

Date 11/19/99

THIS SPACE FOR FEDERAL OR STATE OFFICE

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Accepted by the Utah Division of Oil, Gas and Mining
Date: 12-2-99

Title 18 U.S.C. Section 1001, and Title 43 U.S.C. Section 1212, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

NBU #18 – Clean out and Acid Treatment
Section 10 – T10S –R22E
Uintah County, UT
October 22, 1999

ELEVATION:	5094' GL	5108' KB
TOTAL DEPTH:	9145'	PBTD: 9108' original Tagged inside tbg @ 5818'.
CASING:	4-1/2", 13.5#, N-80 @ 9140' (0.0149 bpf, 66.99 fpb)	
	Burst: 10,710 psi	Collapse: 8,540 psi
PERFORATIONS:	Wasatch 4326' – 7050' Mesa Verde 7438' – 8618' Castlegate 8846'-8952'	
CURRENT PRODUCTION:	131 MCFD (14 day Avg.)	

DISCUSSION

This procedure will cover the work to free point the tubing, chemical cut it, and pull out of the hole with the tubing. The tubing fish will be jarred out. The well will be cleaned out. 15% HCl will be strung across the perforations and the tubing landed at 8450'. The well will be returned to plunger lift operation.

PROCEDURE

1. MIRU workover rig. ND tree. NU BOPE. Test to 500 psi. and 5000 psi.

2. Rig up service company. RIH and free point the tubing. Once the free point has been established, RIH with chemical cutter and cut the tubing. Rig down service company.

3. Pick up overshot with 2-3/8" grapple, bumper sub, jars, 4 2-7/8" drill collars, and intensifier. RIH with fishing assembly. Latch onto fish and jar free.

4. If unable to jar the fish free in a couple of hours, release off the fish and POOH.

5. Pick up wash over shoe, 4 jts. wash pipe, bumper sub, jar, 4 2-7/8" drill collars, and intensifier. RIH, break circulation with air foam unit, and wash over the fish. POOH and repeat Step 3. Continue this Step until all the fish has been recovered.

6. Rig up air foam unit. RIH with 3-7/8" mill and tag fill. Establish circulation and clean out to 9108'. POOH.

7. Pick up notched collar, 1 jt. 2-3/8" tubing, PSN, and RIH on 2-3/8" tubing to 8952'. String 2895 gals of 15% HCl from 8952' to 4326'. Land the EOT at 8450'.

8. ND BOPE and NU tree.

9. After allowing the 15% HCl to soak for a minimum of 3 hours, swab the well in. Turn to sells on plunger lift.

LLA

Approvals:

Prod. Manager R. C. Smith 10/27/99 Tech Mgr_____ VP_____

DATE: 10/21/99 WELL: NBU 18 COUNTY: UINTAH SEC: 10
TWS: 10S
FOREMAN: L. Arnold FIELD: NBU STATE: UTAH RGE: 22E

KB 5108'
GL 5094'
Tbg Hanger 1'

8-5/8" Csg @ 2450'

4 Holes in TBG @ 5924'-25'
4 Holes in TBG @ 5949'-50'

272 jt 8582'

PSN 1.08
1 jt tbg 29.87'
NC 0.50
EOT @ 8613'

Orig. PBTD 9108'
4-1/2" CSG @ 9140'

RIG No.

CASING RECORD

SIZE	WT	GRADE	THD	FROM	TO
8-5/8"	24	K-55		0	2450'
4.5	13.5	N-80	LT&C	0	9140'

TUBING RECORD

SIZE	WT	GRADE	THD	FROM	TO
2.375	4.7	J-55	8RD	0	8613'

JTS	PSN	TAC	MUD ANCHOR
272	8582'		Size
			Length

SUCKER ROD RECORD

NO	SIZE	GRADE	CPLG

ROD ROTATOR Yes ___ No ___

GAS ACHOR Size ___ Length ___

ROD GUIDE PLACEMENT (DESCRIBE):

PUMP DATA:

MANUFR	SIZE	DESCR

SPM ___ SL ___

COMMENTS/PERFORATIONS:

WASATCH: 4326'-27'; 4364-65'; (All @ 2 SPF); 4469'-72'; 4609'-12'; 5149'-52'; (All @ 1 SPF); 5296'-97'; 5598'-99'; 5665'-66'; 5992'-93'; (All @ 2 SPF); 6490'-94'; 6644'-48'; 6668'-72' 6698'-02'; 6740'-44'; 6780'-84'; 6954-58'; 7046'-50'; (All @ 1 SPF)

MESA VERDE: 8614'-18'; 7924'-28'; 7886'-90'; 7852'-56'; 7728'-32'; 7438'-42' (All @ 1 SPF)

CASTLEGATE: 8948'-52'; 8900'-04'; 8872'-76'; 8846'-50'

6-13-97: Tried to pull tubing but it was stuck. Tried to break circulation down the annulus but ended up pumping into the top perforation.

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5. LEASE DESIGNATION AND SERIAL NUMBER:

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME:

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER

8. WELL NAME and NUMBER: Exhibit "A"

2. NAME OF OPERATOR: El Paso Production Oil & Gas Company

9. API NUMBER:

3. ADDRESS OF OPERATOR: 3 South 1200 East CITY Vernal STATE Utah ZIP 84078

PHONE NUMBER: 435-789-4433

10. FIELD AND POOL, OR WILDCAT:

4. LOCATION OF WELL

FOOTAGES AT SURFACE:

COUNTY:

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☒ OTHER: Name Change
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

As a result of the merger between The Coastal Corporation and a wholly owned subsidary of El Paso Energy Corporation, the name of Coastal Oil & Gas Corporation has been changed to El Paso Production Oil & Gas Company effective March 9, 2001.

See Exhibit "A"

Bond # 400JU0708

Coastal Oil & Gas Corporation

NAME (PLEASE PRINT) John T Elzner TITLE Vice President

SIGNATURE DATE 06-15-01

El Paso Production Oil & Gas Company

NAME (PLEASE PRINT) John T Elzner TITLE Vice President

SIGNATURE DATE 06-15-01

This space for State use only)

RECEIVED

JUN 19 2001

DIVISION OF
OIL, GAS AND MINING

5/2000)

(See Instructions on Reverse Side)

State of Delaware

Office of the Secretary of State

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "COASTAL OIL & GAS CORPORATION", CHANGING ITS NAME FROM "COASTAL OIL & GAS CORPORATION" TO "EL PASO PRODUCTION OIL & GAS COMPANY", FILED IN THIS OFFICE ON THE NINTH DAY OF MARCH, A.D. 2001, AT 11 O'CLOCK A.M.

Harriet Smith Windsor, Secretary of State

0610204 8100

010162788

AUTHENTICATION: 1061007

DATE: 04-03-01

CERTIFICATE OF AMENDMENT

OF

CERTIFICATE OF INCORPORATION

COASTAL OIL & GAS CORPORATION (the "Company"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY:

FIRST: That the Board of Directors of the Company, by the unanimous written consent of its members, filed with the minutes of the Board, adopted a resolution proposing and declaring advisable the following amendment to the Certificate of Incorporation of the Company:

> RESOLVED that it is deemed advisable that the Certificate of Incorporation of this Company be amended, and that said Certificate of Incorporation be so amended, by changing the Article thereof numbered "FIRST." so that, as amended, said Article shall be and read as follows:
>
> "FIRST. The name of the corporation is El Paso Production Oil & Gas Company."

SECOND: That in lieu of a meeting and vote of stockholders, the stockholders entitled to vote have given unanimous written consent to said amendment in accordance with the provisions of Section 228 of the General Corporation Law of the State of Delaware.

THIRD: That the aforesaid amendment was duly adopted in accordance with the applicable provisions of Sections 242 and 228 of the General Corporation Law of the State of Delaware.

IN WITNESS WHEREOF, said COASTAL OIL & GAS CORPORATION has caused this certificate to be signed on its behalf by a Vice President and attested by an Assistant Secretary, this 9th day of March 2001.

COASTAL OIL & GAS CORPORATION

David L. Siddall
Vice President

Attest:

Margaret E. Roark, Assistant Secretary

RECEIVED

STATE OF DELAWARE
SECRETARY OF STATE
DIVISION OF CORPORATIONS
FILED 11:00 AM 03/09/2001
010118394 - 0610204

JUN 19 2001

DIVISION OF
OIL, GAS AND MINING

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155

RECEIVED
JUL 12 2001
DIVISION OF
OIL, GAS AND MINING

In Reply Refer To:
3106
UTSL-065841
(UT-924)

JUL 10 2001

NOTICE

El Paso Production Oil & Gas Company	:	Oil and Gas
Nine Greenway Plaza	:	
Houston TX 77046-0095	:	

Name Change Recognized

Acceptable evidence has been received in this office concerning the name change of Coastal Oil & Gas Corporation into El Paso Production Oil & Gas Company with El Paso Production Oil & Gas Company being the surviving entity.

For our purposes, the name change is recognized effective March 9, 2001.

The oil and gas lease files identified on the enclosed exhibit have been noted as to the name change. The exhibit was compiled from a list of leases obtained from our computer program. We have not abstracted the lease files to determine if the entities affected by this name change hold an interest in the leases identified nor have we attempted to identify leases where the entitities are the operator on the ground maintaining no vested recorded title or operating rights interests. We will be notifying the Minerals Management Service and all applicable Bureau of Land Management offices of the change by a copy of this notice. If additional documentation for changes of operator are required by our Field Offices, you will be contacted by them.

If you identify additional leases in which the entities maintain an interest, please contact this office and we will appropriately document those files with a copy of this Notice.

Due to the name change, the name of the principal/obligor on the bond is required to be changed from Coastal Oil & Gas Corporation to El Paso Production Oil & Gas Company. You may accomplish this either by consent of surety rider on the original bond or a rider to the original bond. The bonds are held in Wyoming and Colorado.

Opolonia L. Abeyta

Opolonia L. Abeyta
Acting Chief, Branch of
Minerals Adjudication

Enclosure
1. Exhibit of Leases (1 pp)

cc: Moab Field Office
Vernal Field Office
MMS, Reference Data Branch, MS3130, PO Box 5860, Denver CO 80217
State of Utah, DOGM, Attn: Jim Thompson (Ste. 1210), Box 145801, SLC UT 84114
Teresa Thompson (UT-922)
Joe Incardine (UT-921)

Exhibit of Leases

UTUSL-065841A
UTU-28652
UTU-37943
UTU-44089
UTU-44090A
UTU-61263
UTU-00343
UTU-02651
UTU-02651B
UTU-0142175
UTU-70235
UTU-70406
UTU-74954
UTU-75132
UTU-75699
UTU-76242
UTU-78032
UTU-4377
UTU-4378
UTU-7386
UTU-8344A
UTU-8345
UTU-8347
UTU-8621
UTU-14646
UTU-15855
UTU-25880
UTU-28213
UTU-29535
UTU-29797
UTU-31736
UTU-34350
UTU-34705
UTU-37116
UTU-37355
UTU-37573
UTU-38261
UTU-39223
UTU-40729
UTU-40736
UTU-42469
UTU-47172
UTU-50687
UTU-52298
UTU-0109054
UTU-0143511
UTU-0143512
UTU-38401
UTU-38411
UTU-38418
UTU-38419
UTU-38420
UTU-38421
UTU-38423
UTU-38424
UTU-38425
UTU-38426
UTU-38427
UTU-38428
UTU-53861
UTU-58097
UTU-64376
UTU-65222
UTU-65223
UTU-66746
UTU-67178
UTU-67549
UTU-72028
UTU-72632
UTU-73009
UTU-73010
UTU-73013
UTU-73175
UTU-73434
UTU-73435
UTU-73444
UTU-73450
UTU-73900
UTU-74409
UTU-74410
UTU-74413
UTU-74414
UTU-74415
UTU-74416
UTU-75091
UTU-75096
UTU-75097
UTU-75673
UTU-76259
UTU-76260
UTU-76261
UTU-76493
UTU-76495
UTU-76503
UTU-78228
UTU-78714
UTU-78727
UTU-78734
UTU-79012
UTU-79011
UTU-71694
UTU-00576
UTU-00647
UTU-01470D
UTU-0136484
UTU-8344
UTU-8346
UTU-8648
UTU-28212
UTU-30289
UTU-31260
UTU-33433
UTU-34711
UTU-46699
UTU-78852
UTU-78853
UTU-78854
UTU-075939
UTU-0149767
UTU-2078
UTU-44426
UTU-49530
UTU-51026
UTU-53860
UTU-66401
UTU-67868
UTU-65389
UTU-77084
UTU-61430
UTU-72633
UTU-72650
UTU-49692
UTU-57894
UTU-76829
UTU-76830
UTU-76831

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING		
1. GLH		4-KAS
2. CDW ✓		5-LP
3. JLT		6-FILE

Enter date after each listed item is completed

Change of Operator (Well Sold) — Designation of Agent

Operator Name Change (Only) — X **Merger**

The operator of the well(s) listed below has changed, effective: **3-09-2001**

FROM: (Old Operator):	**TO:** (New Operator):
COASTAL OIL & GAS CORPORATION	EL PASO PRODUCTION OIL & GAS COMPANY
Address: 9 GREENWAY PLAZA STE 2721	Address: 9 GREENWAY PLAZA STE 2721 RM 2975B
HOUSTON, TX 77046-0995	HOUSTON, TX 77046-0995
Phone: 1-(713)-418-4635	Phone: 1-(832)-676-4721
Account N0230	Account N1845

CA No. **Unit:** **NATURAL BUTTES**

WELL(S)

NAME	API NO	ENTITY NO	SEC TWN RNG	LEASE TYPE	WELL TYPE	WELL STATUS
NBU 18	43-047-30221	2900	10-10S-22E	FEDERAL	GW	P
NBU 117	43-047-31914	2900	10-10S-22E	FEDERAL	GW	P
NBU 142	43-047-32013	2900	10-10S-22E	FEDERAL	GW	P
NBU 180	43-047-32113	2900	10-10S-22E	FEDERAL	GW	P
NBU 188	43-047-32234	2900	10-10S-22E	FEDERAL	GW	S
NBU 210	43-047-32340	2900	10-10S-22E	FEDERAL	GW	P
NBU 206	43-047-32341	2900	10-10S-22E	FEDERAL	GW	P
NBU 231	43-047-32561	2900	10-10S-22E	FEDERAL	GW	P
NBU 247	43-047-32977	2900	10-10S-22E	FEDERAL	GW	P
NBU 249	43-047-32978	2900	10-10S-22E	FEDERAL	GW	P
NBU 293	43-047-33182	2900	10-10S-22E	FEDERAL	GW	P
NBU 345	43-047-33704	99999	10-10S-22E	FEDERAL	GW	NEW
NBU 31	43-047-30307	2900	11-10S-22E	STATE	GW	P
NBU 153	43-047-31975	2900	11-10S-22E	FEDERAL	GW	S
NBU 367	43-047-33707	99999	11-10S-22E	STATE	GW	APD
NBU 347	43-047-33709	99999	11-10S-22E	STATE	GW	APD
NBU 350	43-047-33642	2900	14-10S-22E	STATE	GW	DRL
NBU 213	43-047-32401	2900	15-10S-22E	FEDERAL	GW	P
NBU 58-23B	43-047-30463	2900	23-10S-22E	FEDERAL	GW	P
NBU 58	43-047-30838	2900	27-10S-22E	FEDERAL	GW	S

OPERATOR CHANGES DOCUMENTATION

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 06/19/2001
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 06/19/2001
3. The new company has been checked through the **Department of Commerce, Division of Corporations Database on:** 06/21/2001
4. Is the new operator registered in the State of Utah: YES Business Number: 608186-0143

5. If **NO**, the operator was contacted contacted on: N/A

6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the (merger, name change, or operator change for all wells listed on Federal or Indian leases on: 07/10/2001

7. **Federal and Indian Units:** The BLM or BIA has approved the successor of unit operator for wells listed on: 07/10/2001

8. **Federal and Indian Communization Agreements ("CA"):** The BLM or the BIA has approved the operator change for all wells listed involved in a CA on: N/A

9. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: N/A

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 08/21/2001

2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 08/21/2001

3. Bond information entered in RBDMS on: N/A

4. Fee wells attached to bond in RBDMS on: N/A

STATE BOND VERIFICATION:

1. State well(s) covered by Bond No.: N/A

FEDERAL BOND VERIFICATION:

1. Federal well(s) covered by Bond No.: WY 2793

FEE WELLS - BOND VERIFICATION/LEASE INTEREST OWNER NOTIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond No: N/A

2. The **FORMER** operator has requested a release of liability from their bond on: N/A
   The Division sent response by letter on: N/A

3. (R649-2-10) The **FORMER** operator of the Fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: _____

FILMING:

1. All attachments to this form have been **MICROFILMED** on: _____

FILING:

1. **ORIGINALS/COPIES** of all attachments pertaining to each individual well have been filled in each well file on: _____

COMMENTS: Master list of all wells involved in operator change from Coastal Oil & Gas Corporation to El Paso Production Oil and Gas Company shall be retained in the "Operator Change File".

WESTPORT OIL AND GAS COMPANY, L.P.

410 Seventeenth Street #2300 Denver Colorado 80202-4436
Telephone: 303 573 5404 Fax: 303 573 5609

February 1, 2002

Department of the Interior
Bureau of Land Management
2850 Youngfield Street
Lakewood, CO 80215-7093
Attention: Ms. Martha Maxwell

RE: BLM Bond CO-1203
BLM Nationwide Bond 158626364
Surety – Continental Casualty Company
Belco Energy Corporation merger into Westport Oil and Gas Company, Inc.
Conversion of Westport Oil and Gas Company, Inc., into Westport Oil and Gas Company, L.P.
Assumption Rider – Westport Oil and Gas Company, L.P.

Dear Ms. Maxwell:

Pursuant to our recent conversations, please find the following list of enclosures for the BLM's consideration and approval:

Two (2) Assumption Riders, fully executed originals.
Copies of Belco Energy Corporation merger into Westport Oil and Gas Company, Inc.
Copies of Westport Oil and Gas Company, Inc., conversion into Westport Oil and Gas Company, L.P.
List of all Federal/BIA/State Leases - Belco/Westport's leases – in all states.

Please inform us of any additional information needed to complete the change to Westport Oil and Gas Company, L.P., as operator of record.

I thank you for your assistance and cooperation in this matter. Please do not hesitate contacting the undersigned, should a question arise.

Sincerely,
Westport Oil and Gas Company, L.P.

Debby J. Black

Debby J. Black
Engineer Technician

Encl:

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155

In Reply Refer To:
3106
UTU-25566 et al
(UT-924)

FEB 2 1 2002

NOTICE

Westport Oil and Gas Company L.P. : Oil and Gas
410 Seventeenth Street, #2300 :
Denver Colorado 80215-7093 :

Name Change Recognized

Acceptable evidence has been received in this office concerning the name change of Westport Oil and Gas Company, Inc. into Westport Oil and Gas Company, L.P. with Westport Oil and Gas Company, L.P. being the surviving entity.

For our purposes, the name change is recognized effective December 31, 2001.

The oil and gas lease files identified have been noted as to the name change. The exhibit was compiled from a list of leases obtained from our computer program. We have not abstracted the lease files to determine if the entities affected by this name change hold an interest in the leases identified nor have we attempted to identify leases where the entities are the operator on the ground maintaining no vested recorded title or operating rights interests. We will be notifying the Minerals Management Service and all applicable Bureau of Land Management offices of the change by a copy of this notice. If additional documentation for changes of operator are required by our Field Offices, you will be contacted by them.

If you identify additional leases in which the entities maintain an interest, please contact this office and we will appropriately document those files with a copy of this Notice.

Due to the name change, the name of the principal/obligor on the bond is required to be changed from Westport Oil and Gas Company, Inc. to Westport Oil and Gas Company, L.P.. You may accomplish this either by consent of surety rider on the original bond or a rider to the original bond. The bonds are held in Colorado.

UTU-03405
UTU-20895
UTU-25566
UTU-43156
UTU-49518
UTU-49519
UTU-49522
UTU-49523

Robert Lopez
Chief, Branch of
Minerals Adjudication

cc: Moab Field Office
Vernal Field Office
MMS, Reference Data Branch, MS3130, PO Box 5860, Denver CO 80217
State of Utah, DOGM, Attn: Jim Thompson (Ste. 1210), Box 145801, SLC UT 84114
Teresa Thompson (UT-922)
Joe Incardine (UT-921)

UNITED STATES GOVERNMENT

memorandum

Branch of Real Estate Services
Uintah & Ouray Agency

Date: 5 December, 2002

Reply to
Attn of: Supervisory Petroleum Engineer

Subject: Modification of Utah Division of Oil, Gas and Mining Regulations

To: Director, Utah Division of Oil, Gas and Mining Division: John Baza

We have been advised of changes occurring with the operation of your database for Change of Operator. You will be modifying your records to reflect Change of Operator once you have received all necessary documentation from the companies involved, and perhaps in advance of our Notice of Concurrence/Approval of Change of Operator where Indian leases are involved.

We have no objection.

With further comment to Rulemaking, I wish to comment concerning the provision of Exhibits for upcoming Hearings. I would like to see the Uintah & Ouray Agency, BIA, and the Ute Indian Tribe, Energy & Mineral Resources Department added to the list of those parties that receive advance Exhibits so as to allow us to have research time prior to Hearing dates. We will be able to provide a more informed recommendation to the Oil, Gas and Mining Board. It would be best if we would receive only those Exhibits that concern Indian lands, specifically on or adjacent to Indian lands. This may be a difficult situation to attain, as it is not always clear where 'on or adjacent' occurs.

I am aware that you have gone to extra effort to correct this matter already, and I fully appreciate it. My request is intended only to allow the addition of Uintah & Ouray Agency and Ute Indian Tribe to the official listing.

We appreciate you concern, and hope that these comments are timely enough for consideration in the revision process.

Charles H Cameron

CC: Minerals & Mining Section of RES
Ute Energy & Mineral Resources Department: Executive Director
chrono

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Washington, D.C. 20240

FEB 1 0 2003

IN REPLY REFER TO:
Real Estate Services

Carroll A. Wilson
Principal Landman
Westport Oil and Gas Company, L.P.
1368 South 1200 East
Vernal, Utah 84078

Dear Mr. Wilson:

This is in response to your request for approval of RLI Insurance Company's Nationwide Oil and Gas Lease Bond No. RLB0005239 executed effective December 17, 2002, ($150,000 coverage) with Westport Oil and Gas Company, L. P., as principal.

This bond is hereby approved as of the date of this correspondence and will be retained in the Bureau of Indian Affairs' Division of Real Estate Services, 1849 C Street, NW, MS-4512-MIB, Washington, D.C. 20240. All Bureau oil and gas regional offices and the surety are being informed of this action.

In cases where you have existing individual and/or collective bonds on file with one or more of our regional offices, you may now request those offices, directly, to terminate in lieu of coverage under this Nationwide Bond.

Enclosed is a copy of the approved bond for your files. If we may be of further assistance in this matter, please advise.

Sincerely,

Director, Office of Trust Responsibilities

ACTING

Enclosure

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155

IN REPLY REFER TO
UT-922

February 27, 2003

Westport Oil and Gas Company, L.P.
Attn: Gary D. Williamson
1670 Broadway, Suite 2800
Denver, Colorado 80202

Re: Natural Buttes Unit
Uintah County, Utah

Gentlemen:

On February 27, 2003, we received an indenture dated December 17, 2002, whereby El Paso Production Oil & Gas Company resigned as Unit Operator and Westport Oil and Gas Company, L.P., was designated as Successor Unit Operator for the Natural Buttes Unit, Uintah County, Utah.

This indenture was executed by all required parties and the signatory parties have complied with Sections 5 and 6 of the unit agreement. The instrument is hereby approved effective February 27, 2003. In approving this designation, the Authorized Officer neither warrants nor certifies that the designated party has obtained all required approval that would entitle it to conduct operations under the Natural Buttes Unit Agreement.

Your nationwide (Colorado) oil and gas bond No. 1203 will be used to cover all operations within the Natural Buttes Unit.

It is requested that you notify all interested parties of the change in unit operator. Copies of the approved instruments are being distributed to the appropriate federal offices, with one copy returned herewith.

Sincerely,

/s/ Robert A. Henricks

Robert A. Henricks
Chief, Branch of Fluid Minerals

Enclosure

bcc: Field Manager - Vernal (w/enclosure)
SITLA
Division of Oil, Gas & Mining
Minerals Adjudication Group
File - Natural Buttes Unit (w/enclosure)
Agr. Sec. Chron
Fluid Chron

UT922:TAThompson:tt:02/27/2003

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5. LEASE DESIGNATION AND SERIAL NUMBER:

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME:

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER _____

8. WELL NAME and NUMBER: Exhibit "A"

2. NAME OF OPERATOR: El Paso Production Oil & Gas Company

9. API NUMBER:

3. ADDRESS OF OPERATOR: 9 Greenway Plaza CITY Houston STATE TX ZIP 77064-0995

PHONE NUMBER: (832) 676-5933

10. FIELD AND POOL, OR WILDCAT:

4. LOCATION OF WELL

FOOTAGES AT SURFACE:

COUNTY:

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: _____	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
_____	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER: _____
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Operator change to Westport Oil and Gas Company, L.P., 1670 Broadway, Suite 2800, Denver, CO. 80202-4800, effective December 17, 2002.

BOND # _____

State Surety Bond No. RLB0005236
Fee Bond No. RLB0005238

RECEIVED
FEB 2 8 2003
DIV. OF OIL, GAS & MINING

EL PASO PRODUCTION OIL & GAS COMPANY

By: _____
Jon R. Nelsen, Attorney-in-Fact

WESTPORT OIL AND GAS COMPANY, L.P.

NAME (PLEASE PRINT) David R. Dix TITLE Agent and Attorney-in-Fact

SIGNATURE _____ DATE 12/17/02

(This space for State use only)

(5/2000) (See Instructions on Reverse Side)

Form 3160-5
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0135
Expires November 30, 2000

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or reenter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE – Other instructions on reverse side

5. Lease Serial No.
SEE ATTACHED EXHIBIT "A"

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
SEE ATTACHED EXHIBIT "A"

2. Name of Operator
WESTPORT OIL & GAS COMPANY, L.P.

9. API Well No.
SEE ATTACHED EXHIBIT "A"

3a. Address
P.O. BOX 1148 VERNAL, UT 84078

3b. Phone No. *(include area code)*
(435) 781-7023

10. Field and Pool, or Exploratory Area

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
SEE ATTACHED EXHIBIT "A"

11. County or Parish, State
UINTAH COUNTY, UT

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other SUCCESSOR OF OPERATOR
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operations (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.

WESTPORT OIL & GAS COMPANY, L.P., IS CONSIDERED TO BE THE OPERATOR ON THE ATTACHED DESCRIBED LANDS AND IS RESPONSIBLE UNDER THE TERMS AND CONDITIONS OF THE LEASE FOR THE OPERATIONS CONDUCTED ON THE LEASED LANDS OR PORTIONS THEREOF. BOND COVERAGE FOR THIS WELL IS PROVIDED BY FEDERAL NATIONWIDE BOND NO. 158626364, EFFECTIVE FEBRUARY 1, 2002, AND BIA NATIONWIDE BOND NO. RLB0005239, EFFECTIVE FEBRUARY 10, 2003.

RECEIVED
MAR 04 2003
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)*
CHERYL CAMERON

Title
OPERATIONS

Signature

Date
March 4, 2003

THIS SPACE FOR FEDERAL OR STATE USE

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING
1. GLH
2. CDW
3. FILE

X Change of Operator (Well Sold) Designation of Agent/Operator

Operator Name Change Merger

The operator of the well(s) listed below has changed, effective: **12-17-02**

FROM: (Old Operator):	**TO:** (New Operator):
EL PASO PRODUCTION OIL & GAS COMPANY	WESTPORT OIL & GAS COMPANY LP
Address: 9 GREENWAY PLAZA	Address: P O BOX 1148
HOUSTON, TX 77064-0995	VERNAL, UT 84078
Phone: 1-(832)-676-5933	Phone: 1-(435)-781-7023
Account No. N1845	Account No. N2115

CA No. **Unit:** **NATURAL BUTTES**

WELL(S)

NAME	SEC TWN RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
NBU 18	28-10S-21E	43-047-30221	2900	FEDERAL	GW	S
NBU 22-27B	27-10S-21E	43-047-30360	2900	FEDERAL	GW	PA
NBU 33-27-10-21	27-10S-21E	43-047-30502	2900	FEDERAL	GW	PA
NBU 389	28-10S-21E	43-047-34229	2900	STATE	GW	P
NBU 359	29-10S-21E	43-047-33706	2900	STATE	GW	P
CIGE 2-29-10-21	29-10S-21E	43-047-30243	2900	STATE	GW	PA
NBU CIGE 85D-29-10-21	29-10S-21E	43-047-30855	2900	STATE	GW	PA
NBU 390	30-10S-21E	43-047-34230	2900	STATE	GW	P
NBU 67-30B	30-10S-21E	43-047-30574	2900	STATE	GW	PA
NBU CIGE 31-1-10-22	01-10S-22E	43-047-30511	2900	FEDERAL	GW	P
CIGE 105D-1-10-22	01-10S-22E	43-047-31758	2900	FEDERAL	GW	P
CIGE 194-1-10-22	01-10S-22E	43-047-32932	2900	FEDERAL	GW	P
CIGE 223-1-10-22	01-10S-22E	43-047-32983	2900	FEDERAL	GW	P
NBU 3-2B	02-10S-22E	43-047-30267	2900	STATE	GW	P
CIGE 67A-2-10-22P	02-10S-22E	43-047-30938	2900	STATE	GW	P
NBU 217-2	02-10S-22E	43-047-31282	2900	STATE	GW	P
CIGE 10-2-10-22	02-10S-22E	43-047-30425	2900	STATE	GW	P
CIGE 161-2-10-22	02-10S-22E	43-047-32168	2900	STATE	GW	P
CIGE 144-2-10-22	02-10S-22E	43-047-32022	2900	STATE	GW	P
CIGE 195-2-10-22	02-10S-22E	43-047-32797	2900	STATE	GW	P

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 02/28/2003
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 03/04/2003
3. The new company has been checked through the **Department of Commerce, Division of Corporations Database on:** 03/06/2003
4. Is the new operator registered in the State of Utah: YES Business Number: 1355743-0181
5. If **NO**, the operator was contacted contacted on: _____

6. (R649-9-2)Waste Management Plan has been received on: IN PLACE

7. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM-12/31/2003 BIA-12/5/02

8. **Federal and Indian Units:**
The BLM or BIA has approved the successor of unit operator for wells listed on: 02/27/2003

9. **Federal and Indian Communization Agreements ("CA"):**
The BLM or BIA has approved the operator for all wells listed within a CA on: N/A

10. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: N/A

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 03/21/2003
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 03/21/2003
3. Bond information entered in RBDMS on: N/A
4. Fee wells attached to bond in RBDMS on: N/A

STATE WELL(S) BOND VERIFICATION:

1. State well(s) covered by Bond Number: RLB 0005236

FEDERAL WELL(S) BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: 158626364

INDIAN WELL(S) BOND VERIFICATION:

1. Indian well(s) covered by Bond Number: RLB 0005239

FEE WELL(S) BOND VERIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number RLB 0005238

2. The **FORMER** operator has requested a release of liability from their bond on: N/A
The Division sent response by letter on: N/A

LEASE INTEREST OWNER NOTIFICATION:

3. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: N/A

COMMENTS:

Form 3160-5
August 1999

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0135
Expires November 30, 2000

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or reenter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE – Other instructions on reverse side

5. Lease Serial No.
Multiple Wells - see attached

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
891008900A

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
Multiple Wells - see attached

2. Name of Operator
WESTPORT OIL & GAS COMPANY, L.P.

9. API Well No.
Multiple Wells - see attached

3a. Address
P.O. BOX 1148 VERNAL, UT 84078

3b. Phone No. *(include area code)*
(435) 781-

10. Field and Pool, or Exploratory Area
Natural Buttes Unit

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Multiple Wells - see attached

11. County or Parish, State
Uintah County, UT

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operations (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.

Westport Oil & Gas requests a variance to Onshore Order No. 4, Part IIIC.a. requiring each sales tank be equipped with a pressure-vacuum thief hatch and/or vent line valve. The variance is requested as an economic analysis shows the value of the shrunk condensate will not payout the incremental cost of purchasing and maintaining the valve resulting in a loss of value over the producing life of the well.

The volume lost to shrinkage by dropping the tank pressure from 6 ozs. to 0 psig is shown to be 0.3% of the tank volume. This was determined by lab analysis of a representative sample from the field. The sample shrunk from 98.82% of oringinal volume to 98.52% when the pressure was dropped. The average NBU well produces approximately 6 bbls condensate per month. The resulting shrinkage would amount to 0.56 bbls per month lost volume due to shrinkage. The value of the shrunk and lost condensate does not recoup or payout the cost of installing and maintaining the valves and other devices that hold the positive tank pressure. An economic run based on the loss and costs is attached. Westport Oil & gas requests approval of this variance in order to increase the value of the well to the operator and the mineral royalty owners.

14. I hereby certify that the foregoing is true and correct

Name *(Printed/Typed)*
J.T. Conley

Title
Operations Manager

Signature

Date
9-2-2003

COPY SENT TO OPERATOR
Date: 9-16-03
Initials: CHD

SEP 10 2003
DIV. OF OIL, GAS & MINING

THIS SPACE FOR FEDERAL OR STATE USE

Approved by

Title

Date

Federal Approval Of This Action Is Necessary

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Accepted by the Utah Division of Oil, Gas and Mining
Date: 9/16/03
By:

Title 18 U.S.C. Section 1001, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

WELL	LEGALS	STFLEASENO	CANUMBER	APINO
CIGE 258	19-9-21 NWSE	UTU0691	891008900A	4304734667005 1 ✓
CIGE 259	6-10-21 SWNE	UTU01791	891008900A	4304734367005 1
CIGE 260	6-10-21 NENE	UTU01791	891008900A	4304734368005 1
CIGE 261	7-10-21 NWSE	UTU02270A	891008900A	4304734369005 1
CIGE 262	7-10-21 SENE	UTU01791	891008900A	4304734370005 1
CIGE 263	19-10-22 SESE	ML20714	891008900A	4304734226005 1
CIGE 264	19-10-21 SWSW	ML-22792	891008900A	4304734227005 1
CIGE 265	15-9-20 SENE	UTU0144868	891008900A	4304734781005 1
CIGE 266	33-9-22 NWSW	UTU01191A	891008900A	4304734386005 1
CIGE 268	8-10-22 NWSE	UTU01196E	891008900A	4304734412005 1
CIGE 271	32-9-22 SWNE	ML22649	891008900A	4304734795005 1
CIGE 274	13-9-21 NENW	UTU01193	891008900A	4304734778005 1
CIGE 275	21-10-21 NENW	UTU02278	891008900A	4304734799005 1
CIGE 276	21-10-21 SWNW	UTU02278	891008900A	4304734417005 1
CIGE 277	21-10-21 NWNW	UTU02278	891008900A	4304734800005 1
CIGE 278	14-10-21 NESE	UTU01393C	891008900A	4304734445005 1 ✓
CIGE 279	14-10-21 SESE	UTU01393C	891008900A	4304734479005 1 ✓
CIGE 280	5-10-22 SWNW	UTU01195	891008900A	4304734443005 1 ✓
CIGE 281	5-10-22 NWSW	UTU01191A	891008900A	4304734444005 1 ✓
CIGE 282	7-10-22 NENE	ML23609	891008900A	4304734436005 1 ✓
CIGE 283	35-9-21 SESE	ML22582	891008900A	4304734790005 1 ✓
CIGE 284	1-10-21 SWNW	ML23612	891008900A	4304734792005 1
CIGE 285	2-10-21 NENE	ML22652	891008900A	4304734793005 1
CIGE 286	9-10-21 SENE	U01416	891008900A	4304734797005 1
CIGE 287	9-10-21 NWSE	U01416	891008900A	4304734798005 1
CIGE 288	21-9-21 NWSE	UTU0576	891008900A	43047 34843
CIGE 289	7-9-21 NWSE	UTU0575B	891008900A	4304734865005 1 ✓
CIGE 290	10-10-21 NESE	UTU0149079	891008900A	4304734869005 1
CIGE 291	10-10-21 NWSE	UTU0149079	891008900A	4304734868005 1
CIGE 292	8-10-22 SESE	UTU01196E	891008900A	4304734871005 1
CIGE 293	8-10-22 SWSE	UTU01196E	891008900A	4304734838005 1
CIGE 294	8-10-22 NENW	UTU466	891008900A	4304734870005 1
CIGE 295	14-10-22 NENW	UTU01197A-ST	891008900A	4304734820005 1
CIGE 296	14-10-22 NWNW	U01197A-ST	891008900A	4304734858005 1 ✓
CIGE 297	14-10-22 SWNW	U01197A-ST	891008900A	4304734857005 1 ✓
CIGE 298	9-10-22 SESW	UTU01196B	891008900A	4304734855005 1
CIGE 299	14-10-22 NWSW	UTU468	891008900A	4304734859005 1
NBU 004	23-9-21 NESE	UTU0149075	891008900A	4304730056005 1
NBU 006	24-9-21 NWSE	UTU0149076	891008900A	4304730083005 1
NBU 015	26-9-21 SESW	U99070-01	891008900A	4304730204005 1
NBU 016	34-9-22 SWSE	UTU0149077	891008900A	4304730209005 1
NBU 018	10-10-22 SWNE	UTU025187	891008900A	4304730221005 1
NBU 020	28-9-21 NESW	U05676	891008900A	4304730250005 1
NBU 022	18-10-22 SENE	ML22973	891008900A	4304730256005 1
NBU 023	19-9-22 SWNE	UTU0284	891008900A	4304730868005 1
NBU 024N2	12-10-22 SESE	U01197A	891008900A	4304730535005 1
NBU 026	27-9-21 CSE	U01194A	891008900A	4304730252005 1 ✓
NBU 027	33-9-21 NESW	U015630	891008900A	4304730304005 1
NBU 027A	33-9-21 SWNE	U015630	891008900A	4304730398005 1
NBU 028	13-10-21 NWSE	ML23608	891008900A	4304730305005 1
NBU 029	11-10-21 NESW	UTU0149080	891008900A	4304730302005 1
NBU 030	16-10-22 SWSE	ML22653	891008900A	4304730306005 1
NBU 031	11-10-22 SESW	U01197A	891008900A	4304730307005 1 ✓
NBU 032Y	20-9-22 NWNW	UTU0284	891008900A	4304730514005 1
NBU 033Y	18-10-21 NWNW	UTU02270A	891008900A	4304730504005 1
NBU 035Y	29-9-21 NWSE	UTU0581	891008900A	4304730503005 1
NBU 036Y	30-9-21 SENE	UTU0581	891008900A	4304730603005 1
NBU 037XP	3-10-22 SESE	UTU01191A	891008900A	4304730724005 1
NBU 038N2	13-10-22 NWSW	U06512	891008900A	4304730536005 1
NBU 039	29-10-22 SWSW	UTU0132568A	891008900A	4304730861005 1
NBU 041J	31-9-22 NWSW	ML23607	891008900A	4304731224005 1 ✓

Westport Oil & Gas, L.P.

Project Economics Works

Instructions: Fill in blue areas with before and after project data. The evaluation results are shown below and graphed automatically at the bottom of the page. This sheet is protected to prevent accidental alteration of the formulas. See JTC for changes. OPX entered as annual costs and/or as unit OPX costs for $/BF and $/MCF

Project Name: **Condensate Shrinkage Economics**

Is this job a well pull or production rig job ??? N (Y or N)

	BEFORE $/Year	AFTER $/Year	DIFFERENCE $/Year
Gross Oil Revenue	$1,088	$1,099	$11
Gross Gas Revenue	$0	$0	$0
NGL Revenue	$0	$0	$0
PULLING UNIT SERVICE			$0
WIRELINE SERVICE			$0
SUBSURF EQUIP REPAIRS			$0
COMPANY LABOR			$0
CONTRACT LABOR	$0	$200	$200
CONTR SERVICE			$0
LEASE FUEL GAS	$0	$0	$0
UTILITIES - ELECTRICITY	$0	$0	$0
CHEMICAL TREATING			$0
MATERIAL & SUPPLY	$0	$150	$150
WATER & HAULING			$0
ADMINISTRATIVE COSTS			$0
GAS PLANT PROCESSING			$0
Totals	$0	$350	$350

Increased OPX Per Year

Investment Breakdown:

	Cap/Exp Code	Cost, $
Capital $	820/830/840	$1,200
Expense $	830/860	$0
Total $		$1,200

Oil Price	$ 23.00	$/BO
Gas Price	$ 3.10	$/MCF
Electric Cost	$ -	$ / HP / day
OPX/BF	$ 2.00	$/BF
OPX/MCF	$ 0.62	$/MCF

Production & OPX Detail:

	Before		After		Difference	
Oil Production	0.192	BOPD	0.194	BOPD	0.002	BOPD
Gas Production	0	MCFPD	0	MCFPD	0	MCFPD
Wtr Production	0	BWPD	0	BWPD	0	BWPD
Horse Power		HP		HP	0	HP
Fuel Gas Burned		MCFPD		MCFPD	0	MCFPD

Project Life:

Life = 20.0 Years

(Life no longer than 20 years)

Internal Rate of Return:

After Tax IROR = #DIV/0!

AT Cum Cashflow:

Operating Cashflow = ($2,917) (Discounted @ 10%)

Payout Calculation:

$$\text{Payout} = \frac{\text{Total Investment}}{\text{Sum(OPX + Incremental Revenue)}} = 1$$

Payout occurs when total AT cashflow equals investment

See graph below, note years when cashflow reaches zero

Payout = NEVER Years or #VALUE! Days

Gross Reserves:

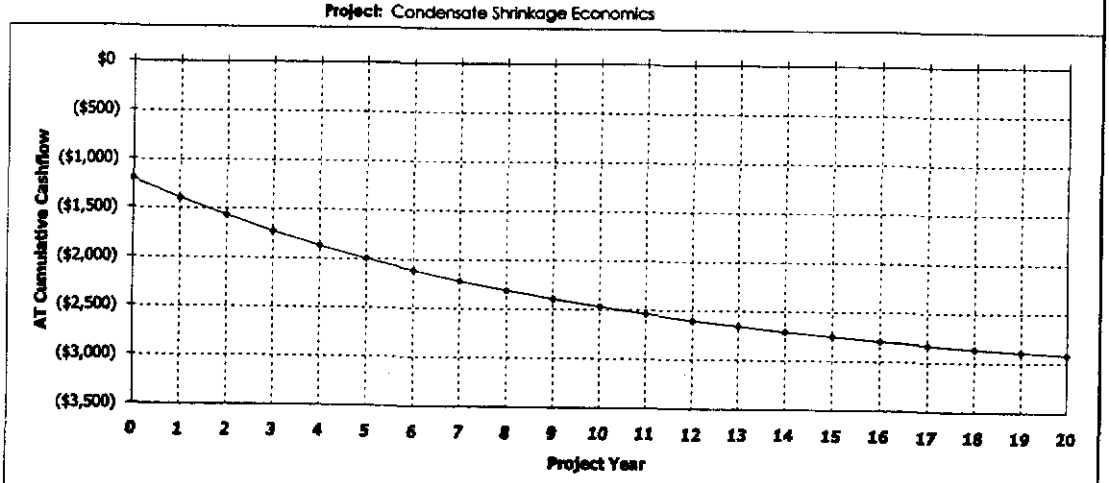
Oil Reserves = 6 BO

Gas Reserves = 0 MCF

Gas Equiv Reserves = 38 MCFE

Notes/Assumptions:

An average NBU well produces 0.192 Bcpd with no tank pressure. The production is increased to 0.196 Bcpd if 6 ozs of pressure are placed on the tank. The increased production does not payout the valve cost or the estimated annual maintenance costs.



Westport Oil and Gas, Inc.

NBU/Ouray Field

RFL 2003-022

COMPARISON OF FLASH BACK PRESSURES

Calculated by Characterized Equation-of-State

Flash Conditions		Gas/Oil Ratio (scf/STbbl) (A)	Specific Gravity of Flashed Gas (Air=1.000)	Separator Volume Factor (B)	Separator Volume Percent (C)
psig	°F				
Calculated at Laboratory Flash Conditions					
80	70			1.019	
0	122	30.4	0.993	1.033	101.37%
0	60	0.0	—	1.000	98.14%
Calculated Flash with Backpressure using Tuned EOS					
80	70			1.015	
6.0 oz	65	24.6	0.777	1.003	98.82%
0	60	0.0	—	1.000	98.52%
80	70			1.015	
4.0 oz	65	24.7	0.778	1.003	98.82%
0	60	0.0	—	1.000	98.52%
80	70			1.015	
2.0 oz	65	24.7	0.779	1.003	98.82%
0	60	0.0	—	1.000	98.52%
80	70			1.015	
0	65	24.8	0.780	1.003	98.82%
0	60	0.0	—	1.000	98.52%

(A) Cubic Feet of gas at 14.696 psia and 60 °F per Barrel of Stock Tank Oil at 60 °F.

(B) Barrels of oil at indicated pressure and temperature per Barrel of Stock Tank Oil at 60 °F.

(C) Oil volume at indicated pressure and temperature as a percentage of original saturated oil volume.

Note: Bubblepoint of sample in original sample container was 80 psig at 70° F with 1 cc water

Form 3160-5
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0135
Expires November 30, 2000

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or reenter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE – Other instructions on reverse side

5. Lease Serial No.
SEE ATTACHED

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
SEE ATTACHED

2. Name of Operator
WESTPORT OIL & GAS COMPANY L.P.

9. API Well No.
SEE ATTACHED

3a. Address
1368 SOUTH 1200 EAST VERNAL, UT 84078

3b. Phone No. *(include area code)*
(435) 781-7024

10. Field and Pool, or Exploratory Area
VARIOUS

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
SEE ATTACHED

11. County or Parish, State
UINTAH, UTAH

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☒ Plug and Abandon	☒ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operations (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.

THE OPERATOR REQUESTS AUTHORIZATION TO PLACE THE SUBJECT WELL LOCATIONS ON TEMPORARILY ABANDONMENT STATUS, UNTIL SUCH TIME THE WELL LOCATIONS CAN BE PLUGGED AND ABANDON.

PLEASE REFER TO THE ATTACHED LIST OF PROPOSED PLUG AND ABANDONMENTS FOR THE NEXT 5 YEARS.

COPY SENT TO OPERATOR
Date: 8-24-04
Initials: CHD

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 8/20/2004
BY: Dustin
* See Conditions of Approval (Attached)

14. I hereby certify that the foregoing is true and correct

Name *(Printed/Typed)*
Sheila Upchego

Title
Regulatory Analyst

Signature

Date
May 25, 2004

Federal Approval Of This Action Is Necessary

THIS SPACE FOR FEDERAL OR STATE USE

Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office	

Title 18 U.S.C. Section 1001, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

RECEIVED
JUN 03 2004
DIV. OF OIL, GAS & MINING

API #	WELL NAME	S-T-R	LEASE NUMBERS
43-047-			
	Proposed 2004 P&A's - 13 Wells		
31900	EAST GUSHER 15-1A	15-6-20 NENE	UTU-58007
30423	JACK RABBIT 1-11	11-10-23 SWNE	UTU-38425
32540	SOUTHMAN CANYON 09-03M	9-10-23 SWSW	UTU-37355
32543	SOUTHMAN CANYON 31-01-L	31-9-23 NWSW	UTU-33433
31100	NBU 070N3	3-10-22 SWNW	UTU-01191
30221	NBU 018	10-10-22 SWNE	UTU-025187
20280	WALKER HOLLOW U MCLISH 1	8-7-23 SWSW.	UTU-02651
30011	WALKER HOLLOW U MCLISH 2	8-7-23 SWSE	UTU-02651
30030	WALKER HOLLOW U MCLISH 4	8-7-23 NESW	UTU-02651
31034	WALKER HOLLOW UNIT 6	8-7-23 SESE	UTU-02651
30027	WALKER HOLLOW U MCLISH 3	8-7-23 NESE	UTU-02651
31092	WALKER HOLLOW UNIT J-8	8-7-23 NWSE	UTU-02651
31975	NBU 153	11-10-22 SWNW	U-01197A
	Proposed 2005 P&A's - 15 Wells		
31833	BASER DRAW 5-1	5-7-22 NWNW	UTU-075939
31834	BASER DRAW 6-1	6-7-22 NWNW	UTU-075939
31859	BASER DRAW FEDERAL 6-2	6-7-22 SWNE	UTU-075939
31304	COORS FEDERAL 14-1D	14-7-21 NWNW	UTU-65223
32009	COORS FEDERAL 2-10HB	10-7-21 NWNW	UTU-6522
30753	DM ICE FRIDAY 34-22	34-8-20 NESE	14-20-H62-2997
32333	FEDERAL 11-1-M	11-6-20 SWSW	UTU-64376
33831	HORSESHOE BEND FED 03-1	3-7-21 NWSE	UTU-0142175
33832	HORSESHOE BEND FED 04-1	4-7-21 NWSE	UTU-66401
33872	HORSESHOE BEND FED 26-3	26-6-21 NWSW	UTU-38401
33667	KENNEDY WASH FED 14-1	14-8-23 NWSW	UTU-71424
30623	SAND RIDGE FED 23-17	17-8-23 NESW	UTU-0143276
31508	STIRRUP FEDERAL 29-2	29-6-21 NWSE	UTU-46699
31634	STIRRUP FEDERAL 29-3	29-6-21 SESE	UTU-78854
30815	WEST WALKER FED. 1-33	33-6-22 NWSW	UTU-38411
	Proposed 2006 P&A's - 15 Wells		
30524	BITTER CREEK 01-03	3-11-22 SWNE	UTU-29797
30379	CANYON VIEW FEDERAL 1-18	18-10-23 SENW	UTU-38421
30369	CROOKED CYN FED 1-17	17-10-23 NENW	UTU-37355
31778	E BENCH UNIT #1	33-11-22 NWSE	UT-121P
30365	FLAT MESA FED. 1-7	7-10-23 NWSE	UTU-38420
30544	LOOKOUT POINT STATE 1-16	16-10-23 NESE	ML-221886A
30766	LOVE UNIT B2-3	3-11-21 SWSW	UTU-8347
30560	NSO FEDERAL 1-12	12-10-23 NENW	UTU-38423
30558	PETE'S FLAT 1-1	1-10-23 NESE	UTU-40736
30382	SAGE HEN FEDERAL 1-6	6-10-23 NESE	UTU-38419
30383	SAGEBRUSH FEDERAL 1-8	8-10-23 SWNE	UTU-37355
30856	SOUTHMAN CANYON 01-05 FED	5-10-23 SENW	UTU-33433
30632	SOUTHMAN CANYON 4-4	4-10-23 NWSE	UTU-33433
30481	WHITE RIVER 1-14	14-10-23 NENW	UTU-38427
31775	WILLOW CREEK UNIT #1	27-11-20 SENE	UT-128P

Proposed 2007 P&A's - 15 Wells

30494	CIGE 035	1-10-20 NESW	UTU-02270A
30542	CIGE 066	23-10-21 SENW	UTU-02278A
30952	CIGE 073D	5-10-22 SWSW	UTU-01191A
30953	CIGE 074D	6-10-22 NWSE	UTU-01195
31915	CIGE 114	34-9-21 NESE	U-01194A
34436	CIGE 282	7-10-22 NENE	ML-23609
30962	KURIP 01-027	1-9-20 NENW	14-20-H62-3004
30848	NBU 043	26-10-20 NWSE	UTU-4476
30534	NBU 047N2	30-10-22 SESW	UTU-0132568A
31250	NBU 087J	3-10-22 NESW	UTU-01191A
31923	NBU 114	5-10-21 SWSW	UTU-01393D
31982	NBU 149	5-10-22 NESE	UTU-01191
31992	NBU 150	9-10-22 SENW	UTU-01196B
32234	NBU 188	10-10-22 SWSW	U-01196C
33692	WONSITS FEDERAL 01-05	5-8-22 LOT 5	UTU-72633

Proposed 2008 P&A's - 11 wells

32401	NBU 213	15-10-22 NWNW	UTU-025187
32480	NBU 217	28-9-21 NESW	U-05678
32944	NBU 242	5-10-22 SWSE	UTU-01191
32917	NBU 253	10-9-21 SWNW	U-0141315
32929	NBU 262	33-9-21 NENE	UTU-0576
33011	NBU 278	30-9-22 SWSW	U-463
32976	NBU 285	3-10-22 NWNW	UTU-01191
32886	NBU 296 GR	24-10-20 NWNE	UTU-4485
33776	NBU 364	29-9-21 SESE	UTU-0581
30838	NBU 58N2	27-10-22 NENW	U-473
31327	NBU 98-V	34-9-21 SWSW	U-01194-A

69 total wells

Form 3160-5
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0135
Expires: November 30, 2000

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

5. Lease Serial No.
U-025187

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
NATURAL BUTTES

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
NBU 18

2. Name of Operator
WESTPORT OIL & GAS COMPANY L.P
Contact: SHEILA UPCHEGO
E-Mail: supchego@westportresourcescorp.com

9. API Well No.
43-047-30221

3a. Address
1368 SOUTH 1200 EAST
VERNAL, UT 84078

3b. Phone No. (include area code)
Ph: 435.781.7024
Fx: 435.781.7094

10. Field and Pool, or Exploratory
NATURAL BUTTES

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 10 T10S R22E SWNE 2377FSL 2401FWL

11. County or Parish, and State
UINTAH COUNTY, UT

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☒ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

THE OPERATOR REQUESTS AUTHORIZATION TO PLUG AND ABANDON THE SUBJECT WELL LOCATION.

PLEASE REFER TO THE ATTACHED PLUG AND ABANDON PROCEDURE.

COPY SENT TO OPERATOR
Date: 8-24-04
Initials: CHD

14. I hereby certify that the foregoing is true and correct.
Electronic Submission #34191 verified by the BLM Well Information System
For WESTPORT OIL & GAS COMPANY L.P, sent to the Vernal

Name *(Printed/Typed)* SHEILA UPCHEGO — Title REGULATORY ANALYST

Signature *(Electronic Submission)* — Date 08/05/2004

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By — Title — Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Accepted by the
Utah Division of
Oil, Gas and Mining
Date: 8/19/04
By:

Federal Approval Of This Action Is Necessary

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

RECEIVED
AUG 12 2004
DIV. OF OIL, GAS & MI

NBU 18
2401' FWL & 2337' FSL
SWNE – Section 10 – T10S – R22E
Uintah County, UT

KBE:	5108'	**API NUMBER:**	43-047-30221
GLE:	5094'	**LEASE NUMBER:**	U-025187
TD:	9145'	**UNIT/CA NUMBER:**	
PBTD:	9108'	**WI:**	100%
		NRI:	81.24804%

CASING: 17.25" hole
13.375" 54.5# K-55 @ 84'
Cemented with 200 SX. Class G to surface.

11" hole
8.625", 24#, K-55 @ 2450'
Cemented with 495 sx 50/50 Pozmix and 100 sx Class "G". Calculation suggests cement should have circulated to surface. No notes on daily reports to confirm.

7.875" hole
4.5" 13.5# N-80 @ 9140'
Cemented with 1600 sx 50/50 Pozmix. TOC @ 4530' by CBL.

TUBING: 2.375" 4.7# J-55 with Arrowset I packer landed at 4319.

Tubular	**Drift inches**	**Collapse psi**	**Burst Psi**	**Capacities**		
				Gal./ft.	**Cuft/ft.**	**Bbl./ft.**
2.375" 4.7# J-55 tbg.	1.901	8100	7700	0.1626	0.02173	0.00387
4.5" 13.5# N/M/I-80 csg	3.795	8540	9020	0.6269	0.0838	0.01492
Annular Capacities						
2.375" tbg. X 4.5" 13.5# csg				0.3968	0.0530	0.00944
4.5" csg. X 8.625" 24# csg.				1.8487	0.2471	0.04401
8.625" csg. X 13.375" 54.5# csg.				3.4566	0.4622	0.0823
4.5" csg. X 7.875" hole				1.7052	0.2278	0.0406
8.625" csg. X 11" hole				1.9026	0.2543	0.0453

EXISTING PERFORATION DETAIL:

Formation	**Top**	**Bottom**
Wasatch	4326'	4327'
Wasatch	4364'	4365'
Wasatch	4469'	4472'
Wasatch	4609'	4612'
Wasatch	5149'	5152'
Wasatch	5296'	5297'
Wasatch	5598'	5599'
Wasatch	5665'	5666'

Wasatch	5992'	5993'
Wasatch	6490'	6494'
Wasatch	6644'	6648'
Wasatch	6668'	6672'
Wasatch	6698'	6702'
Wasatch	6740'	6744'
Wasatch	6780'	6784'
Wasatch	6954'	6958'
Wasatch	7046'	7050'
Mesa Verde	7438'	7442'
Mesa Verde	7728'	7732'
Mesa Verde	7852'	7856'
Mesa Verde	7886'	7890'
Mesa Verde	7924'	7928'
Mesa Verde	8614'	8618'
Castlegate	8846'	8850'
Castlegate	8872'	8876'
Castlegate	8900'	8904'
Castlegate	8948'	8952'

GEOLOGIC INFORMATION:

Formation	**Depth to top, ft.**
Uinta	Surface
Green River	1120'
Wasatch	4160'
Mesa Verde	8750'
Mancos	9080'

Tech. Pub. #92 Base of USDW's

USDW Elevation	~800' MSL
USDW Depth	~4308' KBE

NBU 18

GENERAL

- CEMENT QUANTITIES BELOW ASSUME NEAT CLASS G, YIELD 1.145 CUFT./SX. IF A DIFFERENT PRODUCT IS USED, WELLSITE PERSONNEL ARE RESONSIBLE FOR CORRECTING QUANTITIES TO YIELD THE STATED SLURRY VOLUME. WHEN SQUEEZING, INCLUDE 10% EXCESS PER 1000' OF DEPTH.
- ALTHOUGH SUFFICIENT CEMENT WAS USED ON THE 8.625" INTERMEDIATE STRING TO REACH SURFACE, THERE IS NO EVIDENCE THAT IT ACTUALLY DID. THIS PROCEDURE ASSUMES THE 8.625" X 13.375" ANNULAR SPACE NOT TO BE FILLED FOR PLUG #3 AND #4. A VALVE ON THIS ANNULUS SHOULD BE INSTALLED AND MANIPULATED DURING PUMPING IN AN ATTEMPT TO ESTABLISH CIRCULATION.
- BRINE WITH A MINIMUM DENSITY OF AT LEAST 9 PPG MUST BE PLACED BETWEEN ALL PLUGS. 10 PPG IS ASSUMED IN THIS PROCEDURE.
- NOTIFY THE BLM AT 435-781-4400 24 HOURS BEFORE MOVING ON LOCATION.

P&A PROCEDURE

1. MIRU. KILL WELL AS NEEDED. ND WH, NU AND TEST BOPE. RELEASE PACKER AND POOH WITH TUBING.

1. RU WIRELINE AND MAKE A GAUGE RING RUN TO ~4310'.

2. **PLUG #1, PERFORATIONS:** SET CIBP AT 4300' AND SPOT 50' (~3.7 SX. OR ~4.2 CUFT.) CLASS G CEMENT ON TOP. DISPLACE WELL TO ~4100' WITH 10 PPG BRINE.

3. **PLUG #2, BASE OF USDW's (~4308') AND WASATCH TOP (4160'):** PERFORATE AT 4408' WITH 4 SPF, SET CICR AT 4060' AND SQUEEZE A MINIMUM OF 136 SX. (~156 CUFT.) CLASS G CEMENT BELOW CICR. DISPLACE WELL TO ~1100' WITH 10 PPG BRINE.

4. **PLUG #3, GREEN RIVER TOP (~1120'):** PERFORATE 1220' WITH 4 SPF, SET CICR AT 1020' AND SQUEEZE A MINIMUM OF 149 SX. OF CLASS G CEMENT BENEATH CICR (~170 CUFT.). DISPLACE WELL TO SURFACE' WITH 10 PPG BRINE.

5. **PLUG #4, SURFACE CASING SHOE:** PERFORATE 300' WITH 4 SPF AND CIRCULATE A MINIMUM OF 208 SX. (~238 CUFT.) CLASS G CEMENT DOWN 4.5" CASING AND UP 4.5" X 8.625" AND 8.625" X 13.375" ANNULI.

6. CUT OFF WELLHEAD AND INSTALL MARKER PER BLM GUIDELINES.

7. RDMO. TURN OVER TO OPERATIONS FOR SURFACE REHAB.

State of Utah

Department of
Natural Resources

Division of
Oil, Gas & Mining

ROBERT L. MORGAN
Executive Director

LOWELL P. BRAXTON
Division Director

MICHAEL O. LEAVITT
Governor

OLENE S. WALKER
Lieutenant Governor

CONDITIONS OF APPROVAL TO EXTEND SI/TA OF WELL

Well Name and Number:	Several State and Federal wells
API Number:	See Sundry List
Operator:	Westport Oil and Gas Company L.P.
Reference Document:	Original Sundry dated May 25, 2004, received by DOGM on June 3, 2004

The Division of Oil, Gas and Mining (DOGM) accepts Westport's plan of action to Plug and Abandon sixty-nine wells by year-end 2008. Based upon the plan of action DOGM approves these-sixty-nine (69) wells for extended shut-in until September 1, 2005.

Approval Conditions (Federal Approval necessary on all Federal/Indian wells):

1. If SI/TA is desired beyond the approval date listed above, the operator should submit a request for extended SI/TA at that time. Adherence to the accepted plan of action, wellbore conditions etc. will be taken into consideration.

2. A well monitoring program should be in place to ensure that health, safety and the environment are all protected (wellbore integrity).

3. Any changes in wellbore conditions or integrity; or sustained pressure on casing/casing annuli shall be reported to the Division immediately. A new monitoring program or remedial action may be necessary at that time.

Dustin K. Doucet
Petroleum Engineer

August 20, 2004
Date

1594 West North Temple, Suite 1210, PO Box 145801, Salt Lake City, UT 84114-5801
telephone (801) 538-5340 • facsimile (801) 359-3940 • TTY (801) 538-7223 • *www.ogm.utah.gov*

Form 3160-5
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0135
Expires November 30, 2000

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or reenter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE – Other instructions on reverse side

5. Lease Serial No.
U-025187

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
NATURAL BUTTES UNIT

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
NBU 18

2. Name of Operator
WESTPORT OIL & GAS COMPANY L.P.

9. API Well No.
43-047-30221

3a. Address
1368 SOUTH 1200 EAST VERNAL, UT 84078

3b. Phone No. *(include area code)*
(435) 781-7024

10. Field and Pool, or Exploratory Area
NATURAL BUTTES

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
SWNE SECTION 10-T10S-R22E 2337'FSL & 2401'FWL

11. County or Parish, State
UINTAH COUNTY, UTAH

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
☐ Final Abandonment Notice	☐ Change Plans	☒ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operations (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.

MIRU P&A EQUIP. BLOW DN WELL. TOH/TBG PARTED OUT @3800'. TIH & SET CIRC @3740'.
EST RATE 2-1/2 BMP @350 PSI. PMP 50 SX 45 UNDER SPOT 5 ON TOP. TOH TO 1935'.
PMP 400' BALANCE PLG. TOH & WOC RIH & TAG PLG @1548'. PERF WELL @1220'. ROH.
TIH TO 1032'. SET TOOL -0- RATE. PMP 10 SX ON TOP TOH PERF WELL @300'.
PMP 120 SX DOWN CASING UP ANNULAS GOOD CMT TO SURFACE.
DIG OUT & CUT OFF WELL HEAD TOP OFF WELL WITH 130 SX WOC TOP OFF 15 SX
WELD ON PLATED. RDMO

THE SUBJECT WELL LOCATION WAS PLUGGED AND ABANDONED ON 8/22/05

14. I hereby certify that the foregoing is true and correct

Name *(Printed/Typed)*
Sheila Upchego

Title
Regulatory Analyst

Signature
Sheila Upchego

Date
August 23, 2005

THIS SPACE FOR FEDERAL OR STATE USE

Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office	

Title 18 U.S.C. Section 1001, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

RECEIVED
AUG 30 2005
DIV. OF OIL, GAS & MINING

Form 3160-4
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0137
Expires: November 30, 2000

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No.
U-025187

1a. Type of Well ☐ Oil Well ☒ Gas ☐ Dry Other
b. Type of Completion: ☐ New ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.
Other PLUGGED AND ABANDONED

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No.
NATURAL BUTTES UNIT

2. Name of Operator
WESTPORT OIL & GAS COMPANY L.P.

8. Lease Name and Well No.
NBU 18

3. Address
1368 SOUTH 1200 EAST VERNAL, UTAH 84078

3a. Phone No. *(include area code)*
(435)-781-7024

9. API Well No.
43-047-30221

4. Location of Well *(Report locations clearly and in accordance with Federal requirements)**

At surface SWNE 2337'FSL & 2401'FWL

10. Field and Pool, or Exploratory
NATURAL BUTTES

At top prod. interval reported below

11. Sec., T., R., M., or Block and Survey or Area SEC 10-T10S-R22E

At total depth

12. County or Parish
UINTAH

13. State
UTAH

14. Date Spudded	15. Date T.D. Reached	16. Date Completed ☐ D & A ☐ Ready to Prod.	17. Elevations (DF, RKB, RT, GL)*
12/28/75	02/04/76	P&A ON 8/22/05	5094'GR

18. Total Depth: MD / TVD	19. Plug Back T.D.: MD / TVD	20. Depth Bridge Plug Set: MD / TVD
9145'	9068'	

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)
N/A

22. Was well cored? ☒ No ☐ Yes (Submit copy)
Was DST run? ☒ No ☐ Yes (Submit copy)
Directional Survey? ☒ No ☐ Yes (Submit copy)

23. Casing and Liner Record *(Report all strings set in well)*

Hole Size	Size/Grade	Wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sks. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
7 7/8"	4 1/2"	13.5#		9140' KB		1600 SX			
10 3/4"	8 5/8"	24.0#		2450' KB		595 SX			
17 1/4"	13 3/8"	54.5#		84' KB		200 SX			

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Set (MD)
N/A								

25. Producing Intervals / 26. Perforation Record

	Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A)	N/A						
B)							
C)							
D)							

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and type of Material
N/A	

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
									P&A

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Well Status
								PLUGGED AND ABANDONED

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Well Status

RECEIVED
AUG 30 2005
DIV. OF OIL, GAS & MINING

(See instructions and spaces for additional data on reverse side)

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas : Oil Ratio	Well Status

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas : Oil Ratio	Well Status

29. Disposition of Gas *(Sold, used for fuel, vented, etc.)*

PLUGGED AND ABANDONED ON 8/22/05

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top Meas. Depth
N/A					

32. Additional remarks (include plugging procedure):

MIRU P&A EQUIP. BLOW DN WELL. TOH/TBG PARTED OUT @3800'. TIH & SET CIRC @3740'. EST RATE 2-1/2 BMP @350 PSI. PMP 50 SX 45 UNDER SPOT 5 ON TOP. TOH TO 1935'. PMP 400' BALANCE PLG. TOH & WOC RIH & TAG PLG @1548'. PERF WELL @1220'. ROH TIH TO 1032'. SET TOOL -0- RATE. PMP 10 SX ON TOP TOH PERF WELL @300'. PMP 120 SX DOWN CASING UP ANNULAS GOOD CMT TO SURFACE. DIG OUT & CUT OFF WELL HEAD TOP OFF WITH 130 SX WOC TOP OFF 15 SX. WELD ON PLATE RDMO. **THE SUBJECT WELL LOCATION WAS PLUGGED AND ABANDONED ON 8/22/05.**

33. Circle enclosed attachments:

1. Electrical/Mechanical Logs (1 full set req'd.)
2. Geologic Report
3. DST Report
4. Directional Survey
5. Sundry Notice for plugging and cement verification
6. Core Analysis
7. Other:

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name *(please print)* SHEILA UPCHEGO Title REGULATORY ANALYST

Signature Sheila Upchego Date 8/23/2005

RECEIVED
AUG 30 2005
DIV. OF OIL, GAS & MINING

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

o U.S. GPO: 1999-573-624

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING
1. DJJ
2. CDW

X Change of Operator (Well Sold) Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective: **1/6/2006**

FROM: (Old Operator):	**TO:** (New Operator):
N2115-Westport Oil & Gas Co., LP	N2995-Kerr-McGee Oil & Gas Onshore, LP
1368 South 1200 East	1368 South 1200 East
Vernal, UT 84078	Vernal, UT 84078
Phone: 1-(435) 781-7024	Phone: 1-(435) 781-7024

CA No. **Unit:** **NATURAL BUTTES UNIT**

WELL NAME	SEC TWN RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 5/10/2006
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 5/10/2006
3. The new company was checked on the **Department of Commerce, Division of Corporations Database on:** 3/7/2006
4a. Is the new operator registered in the State of Utah: YES Business Number: 1355743-0181
4b. If **NO**, the operator was contacted contacted on:
5a. (R649-9-2)Waste Management Plan has been received on: IN PLACE
5b. Inspections of LA PA state/fee well sites complete on: n/a 3 LA wells & all PA wells transferred
5c. Reports current for Production/Disposition & Sundries on: ok

6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM 3/27/2006 BIA not yet

7. **Federal and Indian Units:**
The BLM or BIA has approved the successor of unit operator for wells listed on: 3/27/2006

8. **Federal and Indian Communization Agreements ("CA"):**
The BLM or BIA has approved the operator for all wells listed within a CA on: n/a

9. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on:

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 5/15/2006
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 5/15/2006
3. Bond information entered in RBDMS on: 5/15/2006
4. Fee/State wells attached to bond in RBDMS on: 5/16/2006
5. Injection Projects to new operator in RBDMS on:
6. Receipt of Acceptance of Drilling Procedures for APD/New on: n/a Name Change Only

BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: CO1203
2. Indian well(s) covered by Bond Number: RLB0005239
3. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number RLB0005236

a. The **FORMER** operator has requested a release of liability from their bond on: n/a rider added KMG
The Division sent response by letter on:

LEASE INTEREST OWNER NOTIFICATION:

4. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: 5/16/2006

COMMENTS:

Form 3160-5
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0135
Expires November 30, 2000

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or reenter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE – Other instructions on reverse side

5. Lease Serial No.
MULTIPLE LEASES

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
MUTIPLE WELLS

2. Name of Operator
KERR-McGEE OIL & GAS ONSHORE LP

9. API Well No.

3a. Address
1368 SOUTH 1200 EAST VERNAL, UT 84078

3b. Phone No. *(include area code)*
(435) 781-7024

10. Field and Pool, or Exploratory Area

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
SEE ATTACHED

11. County or Parish, State
UINTAH COUNTY, UTAH

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other CHANGE OF OPERATOR
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operations (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.

PLEASE BE ADVISED THAT KERR-McGEE OIL & GAS ONSHORE LP, IS CONSIDERED TO BE THE OPERATOR OF THE ATTACHED WELL LOCATIONS. EFFECTIVE JANUARY 6, 2006. KERR-McGEE OIL & GAS ONSHORE LP, IS RESPONSIBLE UNDER TERMS AND CONDITIONS OF THE LEASE(S) FOR THE OPERATIONS CONDUCTED UPON LEASE LANDS. BOND COVERAGE IS PROVIDED BY STATE OF UTAH NATIONWIDE BOND NO. RLB0005237.

RECEIVED
MAY 10 2006
DIV. OF OIL, GAS & MINING

BLM BOND = CO1203
BIA BOND = RLB0005239

APPROVED 5/16/06
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

14. I hereby certify that the foregoing is true and correct

Name *(Printed/Typed)*	Title
RANDY BAYNE	DRILLING MANAGER
Signature	Date
Randy Bayne	May 9, 2006

THIS SPACE FOR FEDERAL OR STATE USE

Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office	

Title 18 U.S.C. Section 1001, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

Form 3160-5
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0135
Expires November 30, 2000

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or reenter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE – Other instructions on reverse side

5. Lease Serial No.
MULTIPLE LEASES

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
MUTIPLE WELLS

2. Name of Operator
WESTPORT OIL & GAS COMPANY L.P.

9. API Well No.

3a. Address
1368 SOUTH 1200 EAST VERNAL, UT 84078

3b. Phone No. *(include area code)*
(435) 781-7024

10. Field and Pool, or Exploratory Area

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
SEE ATTACHED

11. County or Parish, State
UINTAH COUNTY, UTAH

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other CHANGE OF OPERATOR
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operations (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.

EFFECTIVE JANUARY 6, 2006, WESTPORT OIL & GAS COMPANY L.P., HAS RELINQUISHED THE OPERATORSHIP OF THE ATTACHED WELL LOCATIONS TO KERR-McGEE OIL & GAS ONSHORE LP.

APPROVED 5/16/06
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

RECEIVED
MAY 10 2006
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct

Name *(Printed/Typed)*	Title
BRAD LANEY	ENGINEERING SPECIALIST
Signature	Date
	May 9, 2006

THIS SPACE FOR FEDERAL OR STATE USE

Approved by	Title	Date
Brad Laney		5-9-06
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office	

Title 18 U.S.C. Section 1001, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Colorado State Office
2850 Youngfield Street
Lakewood, Colorado 80215-7076

IN REPLY REFER TO:
CO922 (MM)
3106
COC017387 et. al.

March 23, 2006

NOTICE

Kerr-McGee Oil & Gas Onshore L.P. :
1999 Broadway, Suite 3700 : Oil & Gas
Denver, CO 80202 :

Merger/Name Change - Recognized

On February 28, 2006 this office received acceptable evidence of the following mergers and name conversion:

> Kerr-McGee Oil & Gas Onshore L.P., a Delaware Limited Partnership, and Kerr-McGee Oil & Gas Onshore LLC, a Delaware Limited Partnership merger with and into Westport Oil and Gas Company L.P., a Delaware Limited Partnership, and subsequent Westport Oil & Gas Company L.P. name conversion to Kerr-McGee Oil & Gas Onshore L.P.

For our purposes the merger and name conversion was effective January 4, 2006, the date the Secretary of State of Delaware authenticated the mergers and name conversion.

Kerr-McGee Oil & Gas Onshore L.P. provided a list of oil and gas leases held by the merging parties with the request that the Bureau of Land Management change all their lease records from the named entities to the new entity, Kerr-McGee Oil & Gas Onshore L.P. In response to this request each state is asked to retrieve their own list of leases in the names of these entities from the Bureau of Land Management's (BLM) automated LR2000 data base.

The oil and gas lease files identified on the list provided by Kerr-McGee Oil & Gas Onshore L.P. have been updated as to the merger and name conversion. We have not abstracted the lease files to determine if the entities affected by the acceptance of these documents holds an interest in the lease, nor have we attempt to identify leases where the entity is the operator on the ground that maintains vested record title or operating rights interests. If additional documentation, for change of operator, is required you will be contacted directly by the appropriate Field Office. The Mineral Management Services (MMS) and other applicable BLM offices were notified of the merger with a copy of this notice

Please contact this office if you identify additional leases where the merging party maintains an interest, under our jurisdiction, and we will document the case files with a copy of this notice. If the leases are under the jurisdiction of another State Office that information will be forwarded to them for their action.

Three riders accompanied the merger/name conversion documents which will add Kerr-McGee Oil and Gas Onshore LLC as a principal to the 3 Kerr-McGee bonds maintained by the Wyoming State Office. These riders will be forward to them for their acceptance.

The Nationwide Oil & Gas Continental Casualty Company Bond #158626364 (BLM Bond #CO1203), maintained by the Colorado State Office, will remain in full force and effect until an assumption rider is accepted by the Wyoming State Office that conditions their Nationwide Safeco bond to accept all outstanding liability on the oil and gas leases attached to the Colorado bond.

If you have questions about this action you may call me at 303.239.3768.

/s/Martha L. Maxwell
Martha L. Maxwell
Land Law Examiner
Fluid Minerals Adjudication

Attachment:
List of OG Leases to each of the following offices:
MMS MRM, MS 357B-1
WY, UT, NM/OK/TX, MT/ND, WY State Offices
CO Field Offices
Wyoming State Office
Rider #1 to Bond WY2357
Rider #2 to Bond WY1865
Rider #3 to Bond WY1127

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155
http://www.blm.gov

IN REPLY REFER TO:
3106
(UT-922)

March 27, 2006

Memorandum

To: Vernal Field Office

From: Chief, Branch of Fluid Minerals

Subject: Merger Approval

Attached is an approved copy of the merger recognized by the Bureau of Land Management, Colorado State Office. We have updated our records to reflect the merger from Westport Oil and Gas Company L.P. into Kerr-McGee Onshore Oil and Gas Company. The merger was approved effective January 4, 2006.

Chief, Branch of
Fluid Minerals

Enclosure
Approval letter from BLM COSO (2 pp)

cc: MMS, Reference Data Branch, James Sykes, PO Box 25165, Denver CO 80225
State of Utah, DOGM, Attn: Earlene Russell, PO Box 145801, SLC UT 84114
Teresa Thompson
Joe Incardine
Connie Seare
Dave Mascarenas
Susan Bauman